ENVIRONMENTAL IMPACT STATEMENT

FOR THE

SENTINEL (GBSD) DEPLOYMENT AND MINUTEMAN III DECOMMISSIONING AND DISPOSAL

Air Force Global Strike Command
Barksdale Air Force Base, Louisiana

VOLUME II — FINAL EIS APPENDICES

31 March 2023

Page intentionally left blank.

FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE SENTINEL (GBSD) DEPLOYMENT AND MINUTEMAN III DECOMMISSIONING AND DISPOSAL

Responsible Agencies: U.S. Air Force (*Lead Agency*) and Bureau of Land Management, Bureau of Reclamation, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, U.S. Forest Service, and the Wyoming Army National Guard (*Cooperating Agencies*)

Locations: Locations potentially affected by the project include Coconino county in Arizona; Logan and Weld counties in Colorado; Cascade, Chouteau, Fergus, Judith Basin, Lewis and Clark, Meagher, Teton, and Wheatland counties in Montana; Banner, Cheyenne, and Kimball counties in Nebraska; Bottineau, Burke, McHenry, McLean, Mountrail, Renville, Sheridan, and Ward counties in North Dakota; Box Elder, Davis, Tooele, and Weber counties in Utah; and Goshen, Laramie, and Platte counties in Wyoming.

Inquiries: For inquiries about the Sentinel (formerly GBSD) Environmental Impact Statement (EIS) or requests for printed or digital copies of the EIS, contact Carla Pampe at 318-456-7844 or request materials by email at AFGSC.GBSD.ImpactStudy@us.af.mil. Inquiries can also be made by calling the Sentinel Hotline number at 307-773-3400.

Report Designation: Final Environmental Impact Statement

Estimated Cost: The estimated total cost to prepare both the draft and final EIS, including supporting studies, was $32 million. Costs incurred by cooperating and participating agencies were not included in this estimate.

Abstract: The action includes (1) deploying the Sentinel intercontinental ballistic missile (ICBM) system and (2) decommissioning and disposal of the Minuteman (MMIII) ICBM system. These activities would take place at F.E. Warren Air Force Base (AFB), WY; Malmstrom AFB, MT; Minot AFB, ND; Hill AFB, UT; Utah Test and Training Range, UT; Camp Guernsey, WY; and Camp Navajo, AZ. All MMIII-related facilities, infrastructure, and technologies would be modernized or replaced as necessary to support the Sentinel weapon system. The number of land-based nuclear missiles in the continental United States would not change and no nuclear matter would be generated or disposed of. The EIS presents an analysis of the potential effects on the human and natural environments of implementing the Proposed Action and Reduced Utility Corridors Alternative. Analysis of the No Action Alternative is also presented. Alternative missile systems, methods of basing the missiles, and means of extending the service life of the MMIII ICBM were also considered. The EIS contains an assessment of potential effects of the proposal on the following 15 broad environmental resource areas: air quality, airspace use and management, biological resources, cultural resources, environmental justice, geology and soils, hazardous materials and waste management, health and safety, land use, noise, socioeconomics, transportation and traffic, utilities and infrastructure, visual resources, and water resources. This EIS has been prepared in accordance with the National Environmental Policy Act of 1969 (Public Law 90-190), the 2020 Council on Environmental Quality *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (Title 40 of the *Code of Federal Regulations* [CFR] Parts 1500–1508), and the Air Force's Environmental Impact Analysis Process (32 CFR Part 989).

Page intentionally left blank.

APPENDIX A: COOPERATING AGENCY INFORMATION

Tables

Figures

Page intentionally left blank.

A.1 BUREAU OF LAND MANAGEMENT SUPPLEMENT

A.1.1 LEAD AND COOPERATING AGENCIES

The Department of the Air Force (Air Force) is the lead agency for the *Environmental Impact Statement for the Sentinel (GBSD) Deployment and Minuteman III Decommissioning Disposal* (EIS), pursuant to Title 40 of the *Code of Federal Regulations* (CFR) Part 1502. Since the Proposed Action involves access and activity on Bureau of Land Management- (BLM-) administered land, the Air Force requested that agency's participation in the environmental review process under the National Environmental Policy Act of 1969 (NEPA) (Title 42 of the *United States Code* [U.S.C.] §§ 4321 *et seq*.), as described in the Council on Environmental Quality's NEPA regulations in 40 CFR § 1501.8, *Cooperating Agencies*. BLM agreed to participate as a cooperating agency and to designate the Air Force as the lead agency for National Historic Preservation Act (NHPA) Section 106 responsibilities (tribal consultation) and Endangered Species Act (ESA) Section 7 responsibilities (wildlife). The Air Force prepared this agency supplement in cooperation with BLM to facilitate the processing and administration of approval and issuing of right-of-way (ROW) grants. The supplemental information and ROW grants will enable the Air Force to conduct the proposed activities on BLM-administered land as well as BLM's preparation of agency-specific documentation.

Since official designation as a cooperating agency, BLM has supported the effort by (1) participating in the scoping process, (2) developing information and preparing analyses on issues on which BLM has specialized expertise, and (3) making staff support available to enhance interdisciplinary review capability and provide specific comments (40 CFR § 1503.3).

A.1.2 PURPOSE OF AND NEED FOR BLM-RELATED ACTIVITIES

The purpose of and need for the Air Force's Proposed Action are outlined in Section 1.3 of the Sentinel EIS. Under Title V of the Federal Land Policy and Management Act of 1976 (FLPMA) (43 U.S.C. § 1761(a)(4)), the Air Force would apply to BLM for new ROW grants for proposed activities in addition to the existing real estate instruments on BLM-administered land in Montana. BLM's granting actions would enable the Air Force to comply with Public Law 115-232, as outlined in Section 1.3 of the EIS. In accordance with FLPMA Section 103(c), public lands are to be managed for multiple uses that take into account the long-term needs of future generations for renewable and non-renewable resources. Considering BLM's multiple-use mandate, the BLM would decide whether to approve, approve with modification(s), or deny granting the Air Force ROWs on BLM-administered land for the Proposed Action.

A.1.3 PUBLIC INVOLVEMENT AND INTERAGENCY COORDINATION

The Air Force published the Notice of Intent for the EIS in the *Federal Register* on September 25, 2020, which began the public scoping period. Scoping information provided to the public included general descriptions of the Proposed Action, which included the installation of utility corridors and construction at the launch facilities (LFs). In addition, the Air Force began tribal consultations in compliance with NHPA Section 106 and wildlife consultations with the U.S. Fish and Wildlife Service in compliance with ESA Section 7, as detailed in Section 1.8 of the EIS.

During the scoping process, the Air Force received 148 comments from 55 interested parties. No comments were received that specifically referenced BLM-managed properties. Nine comments referenced the installation of the utility corridors and seven referenced off-base construction. In general, these comments requested (1) assessment of environmental effects during construction, (2) confirmation of post-construction restoration, and (3) regulatory compliance and implementing of best management practices (BMPs) during construction. Each comment was reviewed and incorporated either directly or indirectly into its corresponding section of the EIS.

A.1.4 DESCRIPTION OF THE PROPOSED ACTION

Elements of the Proposed Action that may occur on or affect BLM land within the Malmstrom Air Force (AFB) missile field in Montana include establishing 18.7 miles of new utility corridors and one 1-acre temporary construction area associated with the refurbishment of one LF (**Figure A.1-1**). The Proposed Action also includes the potential to conduct activities within the 21.3 miles of existing utility corridors on BLM land. The utilities would be installed in a 25-ft- (-ft-) to 100-ft-wide temporary construction ROW along existing roads wherever possible and maintained in a 16.5-ft permanent ROW. In addition, new utilities to support the Sentinel weapon system might be installed on existing aboveground infrastructure (e.g., utility poles) along the same routes as the proposed new utility corridors. The temporary construction ROW would be used for temporary storage of construction materials and equipment during the construction period. Sections 2.1.6.3, 2.1.7.3, and 2.1.8.3 of the Sentinel EIS describe in detail the proposed utility corridors, construction areas, and associated activities. Site-specific locations and detailed maps will be available prior to implementation. In addition to project elements proposed in Montana, an existing utility corridor crosses through one parcel of BLM land in the F.E. Warren AFB missile field in Wyoming. If work needs to be conducted on this parcel, the Air Force will meet all requirements of the BLM Rawlins Field Office as applicable within the existing easement.

A.1.5 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Section 3.0 of the Sentinel EIS details the affected environment and analysis of the environmental consequences associated with the Proposed Action, including its off-base element of the proposed new and existing utility corridors and a temporary construction area proposed on BLM-administered land.

On BLM-administered land in Montana, establishing the proposed new utility corridors and temporary construction area would have potentially significant adverse effects on cultural resources. BLM's review of previously conducted cultural resources surveys of approximately 50 percent of the project area located on BLM-administered lands, however, indicated no significant cultural resources are present.

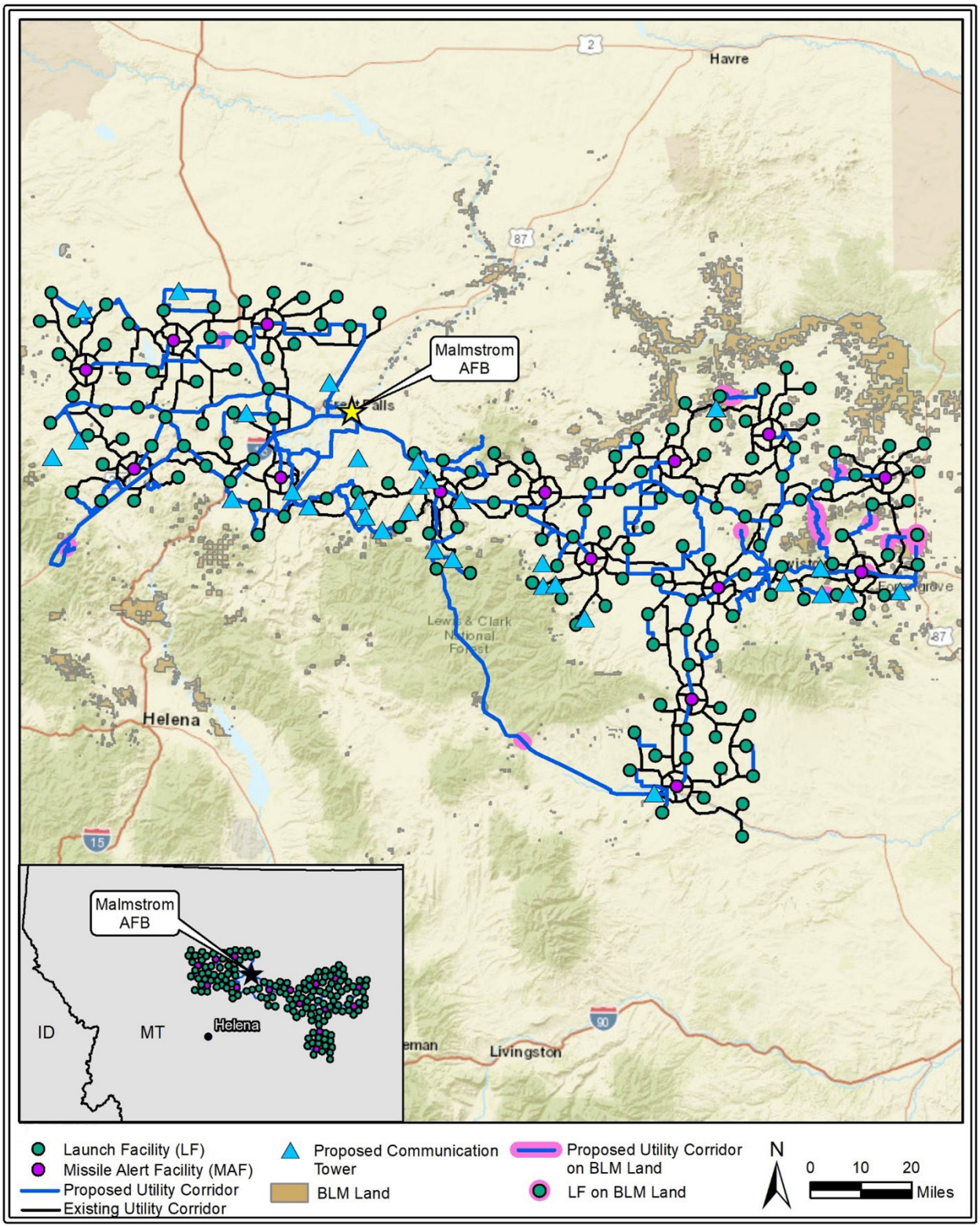


Figure A.1-1 Proposed Utility Corridors and Launch Facility on BLM Land in Montana

The overall Proposed Action would have potentially significant adverse effects on cultural resources, socioeconomics, and utilities and infrastructure. Effects on socioeconomics and utilities and infrastructure would result from implementing elements of the Proposed Action other than utility corridors and the temporary construction area, thus these potentially significant effects would not occur from actions proposed on BLM-administered land in Montana. Potentially significant adverse effects on cultural resources would result from implementing all elements of the overall Proposed Action, including establishing new utility corridors and temporary construction ROWs, and thus could occur on BLM-controlled lands. Only a small fraction of these elements would be on BLM-administered land, however, thereby reducing the potential for significant effects on cultural resources located on BLM-administered land.

The Air Force developed a Programmatic Agreement (PA) in consultation with interested Tribes; the Tribal Historic Preservation Officer for the Three Affiliated Tribes of Fort Berthold Indian Reservation, North Dakota; federal agencies that included BLM; State Historic Preservation Officers for Arizona, Colorado, Montana, Nebraska, North Dakota, Utah, and Wyoming; the Advisory Council on Historic Preservation (ACHP); and other consulting parties that stipulates the efforts to be conducted to identify cultural resources, evaluate any identified resources for significance, and mitigate adverse effects on them. This PA and the stipulations it contains naturally incorporate the portions of the Sentinel Project that occur on BLM-administered land and would reduce the significance of adverse effects on cultural resources. Surveys were conducted of the project areas located on BLM-administered lands in 2021, and consultation with Tribes and other consulting parties is ongoing.

The elements of the Air Force's Proposed Action that would be implemented on BLM-administered land in Montana would be consistent with BLM's *Record of Decision and Approved Lewistown Resource Management Plan* (BLM 2021). The installation of 18.7 miles of new utility corridors, activities within the existing 21.3 miles of utility easements, and the use of a 1-acre temporary construction area adjacent to an existing LF would not reduce the sustainability of wildlife populations, outdoor recreation opportunities, or other public lands management in central Montana. After a thorough review of the comprehensive and master plans for the counties encompassing Malmstrom AFB and the missile field, the Air Force identified no county-level proposed projects that would have reasonably foreseeable effects and that would have a reasonably close causal relationship to the Proposed Action (Cascade County 2014; Choteau County 2017; Fergus County 2016; Judith Basin County 2016; Lewis and Clark County 2004; Meagher County 2017; Teton County 2016).

The BLM provided a checklist of issues and resources for consideration in preparing the Air Force's applications for ROW grants for the Proposed Action on BLM-administered land. BLM provided a preliminary determination of effects and rationale for issues that might arise for the ROW grant applications. **Table A.1-1** outlines the BLM and Sentinel EIS potential level of effects for the utility corridors and temporary construction area proposed on BLM-administered land and identifies relevant sections of the EIS for each resource area.

Table A.1-1. Issues and Resources Considered under the Proposed Action on BLM-Administered Lands

Issue	BLM determination	BLM rationale	Level of effect on BLM-administered lands		Section of EIS
			Short-term	Long-term	
Access	NI	The portion of the Proposed Action on BLM lands does not restrict or improve access to public lands.	N/A[c]	N/A	N/A
Air Quality	NI	Undetectable and temporary impacts at the site-specific scale; however, potential broadscale impacts might occur.	Minor	Negligible	3.1
Airspace Use and Management	N/A	N/A	None	None	N/A
Areas of Critical Environmental Concern	NP	None in or near project area.	N/A	N/A	N/A
Backcountry Conservation Areas	NP	None in or near project area.	N/A	N/A	N/A
Biological Resources	Specific biological resource determinations given below	Specific biological resource rationale given below.	Minor	Negligible	3.3
Climate	NI	Undetectable and temporary impacts at the site-specific scale; however, potential broadscale impacts might occur.	Minor	Negligible	3.1
Cultural Resources	PI	Overall, approximately 50% of the project already is inventoried to Class III standards with no significant sites within proposed utility sites.[a]	To be determined through measures in the PA	To be determined through measures in the PA	3.4
Environmental Justice	NI	No environmental justice populations exist at the site-specific level; however, potential broadscale impacts might occur.	None	None	3.5
Farmlands (Prime or Unique)	NP	None present in the proposed project area.	N/A	N/A	N/A
Fire Management	NP	Not affected.	N/A	N/A	N/A
Fish Habitat	NP	Streams intermittent. No fish resources present.	N/A	N/A	N/A
Floodplains	PI	Not affected if BLM design features and BMPs are incorporated.	Minor	Negligible	3.15

Issue	BLM determination	BLM rationale	Level of effect on BLM-administered lands		Section of EIS
			Short-term	Long-term	
Forests and Rangelands	NP	Not affected if the portion of the Proposed Action on BLM lands is sited in disturbed areas between roadway and fence line and BLM design features and BMPs in this appendix are incorporated.	N/A	N/A	N/A
Forestry Resources and Woodland Products	NP	The portion of the Proposed Action on BLM lands occurs primarily in non-timbered areas. No commercial forest resources present.	N/A	N/A	N/A
Human Health and Safety Concerns	NP	No human health or public safety concerns identified at the site-specific scale; however, potential broadscale impacts might occur.	Minor	Negligible	3.8
Invasive, Non-Native Species	NI	Utilities are proposed within established county and highway ROWs. The proposed utility corridors on BLM lands run adjacent to county roads and would be within the county road ROW. There would not be an increased level of disturbance and, if noxious weeds are present, the Air Force and counties would be responsible for their control.	Minor	Negligible	3.3
Lands and Realty	PI	The portion of the Proposed Action on BLM lands would require ROW processing.	N/A	N/A	N/A
Lands with Wilderness Characteristics	NP	There are no lands managed for wilderness characteristics on or near the project area.	N/A	N/A	N/A
Livestock Grazing Management	NI	The portion of the Proposed Action on BLM lands occurs along disturbed road ROWs outside of grazing allotments and would not affect livestock grazing to an extent that would warrant analysis.	N/A	N/A	N/A
Migratory Birds and Wildlife	NI	No additional wildlife concerns between the ditches/fences; however, additional analysis and considerations would be required for ROWs beyond the fences.	Minor	Negligible	3.3

Issue	BLM determination	BLM rationale	Level of effect on BLM-administered lands		Section of EIS
			Short-term	Long-term	
Upper Missouri Breaks National Monument (Objects)	NP	Outside the project area.	N/A	N/A	N/A
National Trails	PI	Not affected if any portion of the Proposed Action on BLM lands is sited in disturbed areas between roadway and fence line and BLM design features and BMPs in this appendix are incorporated.	To be determined through measures in the PA	To be determined through measures in the PA	3.4
Native American Religious Concerns	PI	Tribal consultation is being conducted by the Air Force as part of the Section 106 lead federal agency responsibilities and as part of EIS consultation.	To be determined through measures in the PA	To be determined through measures in the PA	3.4
Noise Resources	PI	Not impacted at the site-specific scale; however, potential broadscale impacts might exist.	Minor	Negligible	3.10
Paleontological Resources	PI	Not affected if portion of the Proposed Action on BLM lands is sited in disturbed areas between roadway and fence line and BLM design features and BMPs in this appendix are incorporated.	N/A	N/A	N/A
Recreation Resources	NI	Maiden and Judith Peak Roads are within the Judith Mountains Special Recreation Management Area. All other identified construction sites are outside of designated recreation areas. No effects on the recreation resources are expected if construction activities do not result in significant restrictions or limitations to recreational access and utilization.	Minor	Negligible	3.9
Greater Sage-Grouse Habitat	PI	Greater sage-grouse and/or greater sage-grouse habitat is present. No concerns exist if construction occurs between the ditches/fences; however, additional analysis and considerations should occur for ROWs beyond the fences.	Minor	Negligible	3.3
Socioeconomics	PI	Not impacted at the site-specific scale; however, potential broadscale impacts might exist.	None	None	3.11

Issue	BLM determination	BLM rationale	Level of effect on BLM-administered lands		Section of EIS
			Short-term	Long-term	
Soils	PI	Not affected if portion of the Proposed Action on BLM lands is sited in disturbed areas between roadway and fence line and BLM design features and BMPs in this appendix are incorporated.	Minor	Negligible	3.6
Threatened, Endangered, or Candidate Plant or Animal Species	PI	Canada lynx, grizzly bear, and whitebark pine have the potential to occur in the project area.	Minor	Minor	3.3
Vegetation	NP	Not affected if the portion of the Proposed Action on BLM lands is sited in disturbed areas between roadway and fence line and BLM design features and BMPs are incorporated.	Minor	Negligible	3.3
Visual Resources	PI	The proposed activities would not adversely affect the scenic qualities of the surrounding landscape.[b]	Minor	Negligible	3.14
Wastes, Hazardous or Solid	PI	Not affected if the portion of the Proposed Action on BLM lands is sited in disturbed areas between roadway and fence line and other design features and BMPs in this appendix are incorporated.	Minor	Negligible	3.7
Water Resources	PI	Not affected if the portion of the Proposed Action on BLM lands is sited in disturbed areas between roadway and fence line and attached design features and BMPs in this appendix are incorporated.	Minor	Negligible	3.15
Wetlands/Riparian Zones	PI	Not affected if the portion of the Proposed Action on BLM lands is sited in disturbed areas between roadway and fence line and attached design features and BMPs in this appendix are incorporated.	Minor	Negligible	3.3
Wild and Scenic Rivers	NP	None exist in the planning area.	N/A	N/A	N/A
Wild Horses and Burros	NP	None exist in the planning area.	N/A	N/A	N/A

Issue	BLM determination	BLM rationale	Level of effect on BLM-administered lands		Section of EIS
			Short-term	Long-term	
Wilderness and Wilderness Study Areas	NP	None exist in the planning area.	N/A	N/A	N/A
Wildlife	NI	Greater sage-grouse and/or greater sage-grouse habitat addressed under the Greater Sage-Grouse Habitat issue. Other wildlife might be considered depending on where the ROW is proposed. No additional wildlife concerns exist if construction occurs between the ditches/ fences; however, additional analysis and considerations should occur for ROWs beyond the fences.	Minor	Negligible	3.3

Notes: N/A = not applicable; NI = present, but not affected to a degree at which detailed analysis is required; NP = not present in the area impacted by the Proposed Action; PI = present and might be impacted.
[a] BLM would require additional inventory to be performed only on lands not previously covered and would require a 150-ft survey width (75 ft either side of the centerline). If sites are encountered during inventory, contractors would be required to delineate the extent of the sites in full even if they expand outside of the proposed area of potential effects. The survey width and delineation are beneficial for reroutes and potential mitigation and/or avoidance strategies related to the site types (e.g., stone circles and cairns) predominantly found in the district.
[b] Establishing new utility corridors and modernizing the LF on State Highway 19, as proposed, would not adversely affect the scenic qualities of the surrounding landscape. The BLM-administered lands at these project sites are currently managed as a Visual Resource Management Class IV. The objective of this class is to provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities might dominate the view and be the major focus of viewer attention.
[c] Not a resource area analyzed in the EIS or a BLM issue area.

A.1.6 MITIGATION MEASURES

The discussion of each resource area in Section 3.0 of the Sentinel EIS ends by addressing the mitigation measures associated with the Proposed Action. The primary mitigation measures relevant to the Proposed Action on BLM-administered land that the Air Force identified for each resource area include the following:

- **Air Quality**: Proceed in full compliance with all applicable state-mandated requirements for air quality, such as controlling fugitive dust emissions during construction.
- **Preconstruction Surveys**: Follow federal and state guidelines for conducting preconstruction surveys in areas determined to be occupied by or to contain habitat for sensitive biological resources and take precautions to avoid or minimize effects on the resources to the maximum extent practicable.
- **Cultural Resources Identification**: Conduct surveys and implement protective measures for the Proposed Action in accordance with the PA prepared in cooperation with tribal stakeholders, Section 106 consulting parties, and the ACHP.
- **Soils**: Install compost blankets and silt fences and implement other BMPs for erosion and sediment control.

- **Hazardous Waste Management**: Comply with Department of Defense (DoD) hazardous waste management plans and spill prevention, control, and countermeasures plans to minimize effects from the use of hazardous materials and generation of waste.
- **Health and Safety Plans**: Prepare and maintain site-specific health and safety plans to minimize effects on worker and public health and safety.
- **Land Use**: To minimize potential effects on land use, locate the utility corridors within or along existing utility corridors and roadways and locate construction areas adjacent to existing facilities.
- **Noise**: Comply with all state and local noise regulations to minimize the potential effects on the noise environment.
- **Transportation and Traffic**: To minimize potential effects on transportation and traffic, plan routes and schedules for construction vehicles to minimize potential conflicts with other traffic and continue existing maintenance of defense access roads to missile alert facilities and LFs.
- **Utilities and Infrastructure**: Coordinate with city and county officials for compliance with local planning on utilities and infrastructure.
- **Visual Resources**: To minimize potential effects on visual resources, locate utility corridors along existing utility corridors and roadways and locate construction areas adjacent to existing facilities.
- **Water Resources**: Use approved sediment and erosion control measures during construction activities and follow DoD spill prevention and response management plans to minimize potential effects on water resources.
- **Wildlife**:
    - In Greater Sage-Grouse habitat, ROWs will be collocated within existing disturbance or ROWs along roadways where possible; If this is not possible, the use of construction techniques, such as "knifing and ploughing", will be utilized to prevent disturbance to sagebrush and native vegetation. If impacts to sage-grouse or their habitat cannot be avoided through siting along existing major roadways, or using minimization construction techniques, then compensatory mitigation will be required in the vicinity of affected habitats. Potential compensatory mitigation that would be considered include, but are not limited to mesic/riparian habitat improvements along Ford’s Creek and Box Elder Creek.
    - The Air Force is responsible for providing GIS data for the Project's layout/design to the Montana Sage-Grouse Habitat Conservation Program (MSGHCP) so the MSGHCP can develop final disturbance calculations for sage-grouse. BLM approval is contingent upon acceptable design criteria and mitigation through MSGHCP in coordination with BLM.
    - Design criteria for installing new and replacing existing lines within Priority Habitat Management Areas (PHMA).
    - Avoid new surface disturbance in Priority Habitat Management Areas (PHMA) where feasible.
    - Fire suppression equipment will be accessible during construction and maintenance activities.

- Other than temporary access roads to newly acquired sites and temporary construction areas, no new permanent roads will be created as a result of the Project on BLM Administered lands.
- No permanent vegetation clearing to occur around existing or replacement lines, and areas would be allowed to restore to preconstruction conditions following completion of reclamation.
- In Priority Habitat Management Areas (PHMA), unless within established roadways along county roads and highways, no construction activities would be allowed between March 15 and July 15 for new and modified lines to protect breeding, nesting and early brood rearing habitat for Greater Sage-Grouse.

A.1.7 ADDITIONAL CONSIDERATIONS AND REQUIREMENTS

BLM reviewed the portion of the Proposed Action that would be implemented on BLM-administered land for installing utility corridors and conducting construction staging and material storage on that land. They provided the Air Force with information on acquiring ROW grants, permitting, land use management considerations, BMPs, and design features. BLM identified the need for multiple ROW grant applications for six utility corridor locations and one utility corridor/ temporary construction area adjacent to an LF (see **Figure A.1-1**). BLM determined that the existing LF is on Public Land Order 3723 issued July 6, 1965, which withdrew "lands for Air Force Department facilities" (30 FR 5635, April 21, 1965). While work within the fence line might result in fewer resource effects, a ROW grant would still be required for work within the fence line and for temporary use of an adjacent 1-acre area for storage of construction materials and equipment.

In addition to the BMPs outlined in the Sentinel EIS, BLM has additional agency-specific requirements, permits, management plans, BMPs, and design features that would apply to the proposed utility corridors and temporary construction area when granted on BLM-administered land. Additional considerations and requirements would include the following:

- **Existing ROWs**: BLM would require that existing ROWs be left undisturbed and noted that some of the proposed routes for utility corridors parallel or cross existing ROWs.
- **Perpetual ROW Grants**: BLM can issue "perpetual ROW grants" to federal government entities. These grants are not permanent authorization as they can be terminated if the holder does not comply with the terms and conditions of the grant. In addition, these grants are subject to the standard 20-year grant review and subsequent 10-year reviews under 43 CFR § 2805.10(a)(3).
- **Utility Corridors**: BLM does not issue ROWs for "utility corridors". Utility corridors are designated land uses in a Resource Management Plan (RMP) that are designed to be compatible with the management goals of the areas through which they pass. The *Record of Decision and Approved Lewistown Resource Management Plan* does not designate any "utility corridors" (BLM 2021). BLM does issue ROWs for "utility corridors", which are designed to be consistent with the current land uses in the area. Thus, the Air Force should request ROW grants instead of utility corridors.
- **Land Categories**: Public Domain and Bankhead-Jones Land Utilization are the two categories of land administered by BLM. Since all proposed utility corridors would be

located on BLM-administered lands, no practicable distinction is necessary and land type can be dismissed as an issue.

- ROW grant applications should include an SF-299, *Application for Transportation and Utility Systems and Facilities on Federal Lands*; a map covering the area and showing the location of the Proposed Action activity, and a plan of development. The Air Force would prepare a reclamation plan, with interim reclamation starting directly after installation.
- BLM would require the Air Force to attend a preapplication meeting with the appropriate personnel in the BLM Lewistown Field Office before filing applications.
- The management plans that govern the Proposed Action on BLM-administered land include (1) *Record of Decision and Approved Lewistown Resource Management Plan* and (2) *Lewistown Field Office Greater Sage-Grouse Proposed Resource Management Plan Amendment and Final Environmental Impact Statement (BLM 2015, 2021)*.
- Before issuing a ROW grant, BLM would have to approve the Air Force's NEPA analysis completed for the applications as required by 40 CFR Parts 1500–1508 and take any other action necessary to fully evaluate and decide whether to approve or deny the application.

During the ROW grant application process, it would be determined which of the following requirements outlined in the *Record of Decision and Approved Lewistown Resource Management Plan* (2021) apply to installing the proposed utilities (BLM 2021):

- **GM-MA-01 and SR-MA-01:** Apply conditions of approval, BMPs, and mitigation measures (shown in Appendix F of the plan, *Design Features and BMPs*) and other site-specific design features to all resource used to promote rapid reclamation, maximize resource protection, and minimize soil erosion.
- **GA-MA-02 and SR-MA-02:** As described in Appendix G of the plan, reclamation would be required for surface-disturbing activities.
- **SR-MA-03:** Any proposed activities conducted in sensitive soils would incorporate BMPs and other mitigation measures.
- **SR-AU-01:** Prior to authorizing any surface-disturbing activity (e.g., range improvements, mineral development, or ROW location), BLM would evaluate the activity and, if necessary, apply mitigating measures, require reclamation, deny the authorization, or relocate the activity to a more suitable soil type. Site-specific measures would be developed for soils with high erosion susceptibility, steep slopes, sparse vegetation, and shallow soil depth. Activity plans would include mitigation to protect ground cover and streambank stability and to reduce sediment yields from surface-disturbing activities. All surface-disturbing activities are subject to an on-site evaluation to develop mitigation measures to reduce erosion and soil compaction and improve soil stability and salinity control.
- **VEG-MA-17:** Planned or permitted surface-disturbing activities would be considered with BMPs on BLM-administered lands with infestations.
- **FW-AU-34:** Apply appropriate BMPs, conservation actions, and design features as outlined in Appendix F of the plan to all site-specific surface-disturbing or disrupting activities during implementation-level project analysis.

- **LR-MA-01:** Collocate new ROWs, including those associated with valid existing rights, within existing ROWs, or where it best minimizes effects. Use existing roads, or realignments as described above, to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then authorize to the minimum standard necessary any new road constructed to an approved BLM standard.

Portions of the action are proposed in General Habitat Management Areas and Priority Habitat Management Areas for the management of the greater sage-grouse. The following parcels are subject to decisions in the *Lewistown Field Office Greater Sage-Grouse Proposed Resource Management Plan Amendment and Final Environmental Impact Statement (BLM 2015)*:

- **General Habitat Management Area**: (1) T. 21 N., R. 16 E., sec 24 and 25. (2) T. 21 N., R. 17 E., sec 29 and 30.
- **Priority Habitat Management Area**: (1) T. 16 N., R. 23 E., sec 22. (2) T. 16 N., R. 23 E. sec 10.
- **Non-habitat areas and not subject to decisions in the Lewistown Field Office GSG ARMPA**: (1) T. 17 N., R. 21 E., sec 25. (2) T. 18 N., R. 20 E., sec 11 and 12. (3) T. 15 N., R. 21 E., sec 13.

BLM provided the following summary of applicable plan decisions from the Lewistown Field Office Greater Sage-Grouse Proposed Resource Management Plan Amendment and Final Environmental Impact Statement (BLM 2015), which is incorporated into the *Record of Decision and Approved Lewistown Resource Management Plan* (BLM 2021):

- **Action LR-1.1**: Where new ROWs are required, collocate new ROWs within existing ROWs or where it best minimizes impacts on greater sage-grouse and greater sage-grouse habitat.
- **Action LR-1.7**: The holder of a ROW shall be responsible for weed control on disturbed areas within the limits of the ROW. The holder shall be responsible for invasive weed control for the life of the ROW. The holder is responsible for weed control and monitoring for 3 years after reclamation has been completed. The holder would be responsible for consultation with the Authorized Officer and/or local authorities for acceptable weed control methods.

During the ROW grant application process, it would be determined which of the following design features outlined in the *Record of Decision and Approved Lewistown Resource Management Plan* might apply to this action (BLM 2021):

- **Sensitive Soils**: Prior to surface disturbance on sensitive soils, a reclamation plan would be approved by the BLM Authorized Officer. The plan would demonstrate that (1) no other practicable alternatives exist for relocating the activity, (2) the activity would be located to reduce effects on soil and water resources, (3) site productivity would be maintained or restored, (4) surface runoff and sedimentation would be adequately controlled, (5) on- and off-site areas would be protected from accelerated erosion, (6) no area susceptible to mass wasting would be disturbed, and (7) surface-disturbing activities would be prohibited during extended wet periods.

- **Slope**: Prior to surface disturbance on slopes over 30 percent, an engineering/ reclamation plan would be approved by the BLM Authorized Officer. The plan must demonstrate how the following would be accomplished: Site productivity would be restored; surface runoff would be adequately controlled; off-site areas would be protected from accelerated erosion, such as rilling, gullying, piping, and mass wasting; water quality and quantity would be in conformance with state and federal water quality laws; surface-disturbing activities would not be conducted during extended wet periods; and construction would not be allowed when soils are frozen.
- **Water, Riparian, Wetland, and Floodplains**: Surface disturbance and disrupting activities would not occur in perennial or intermittent streams, lakes, ponds, reservoirs, 100-year floodplains, wetlands, or riparian areas, unless the appropriate environmental review indicates that such actions are the only practicable alternative. Surface disturbance would be controlled within 300 ft of riparian and wetland areas. Surface-disturbing activities would require a plan with design features that demonstrate how all actions would maintain or improve the functionality of riparian/wetland areas. The plan would address (1) potential effects on riparian and wetland resources, (2) mitigation to reduce effects to acceptable levels (including timing restrictions), (3) post-project restoration, and (4) monitoring (the operator must conduct monitoring capable of detecting early signs of changing riparian and wetland conditions).
- **Cultural Resources**: Surface disturbance is prohibited within National Register of Historic Places- (NRHP-) eligible properties, districts, and cultural sites allocated to conservation for future, traditional, and public use. Some leased areas might be found to contain historical properties or resources protected under the NHPA; American Indian Religious Freedom Act (42 U.S.C. § 1996); Native American Graves Protection and Repatriation Act (25 U.S.C. Chapter 32); Executive Order 13007, *Indian Sacred Sites*; or other statutes and executive orders. BLM would not approve any ground-disturbing activities that might affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. BLM might require development proposals to be modified to protect such properties or might disapprove any activity likely to result in adverse effects that cannot be successfully avoided, minimized, or mitigated.
- **Cultural Resource Inventories, Sacred and Historic Properties**: The surface management agency is responsible for ensuring that the affected lands are examined to determine if cultural resources are present and to specify design features. Land within or next to known sacred sites and historical properties and containing high potential for NRHP-eligible historical and cultural properties. Project proponents are notified that archaeological resource inventory and mitigation costs might be high in the project area. A cultural resource plan of operations would be developed in consultation with the BLM Lewistown or Butte Field Office and must be approved before development takes place. All surface use plans would be presented to the archaeologist in the Lewistown or Butte Field Office for review.
- **Additional Required Design Features for Cultural Resources**: Avoidance of all significant cultural resource locations by no less than 50 ft from the identified site boundary.

- **Land Use Authorizations**: Land use authorizations incorporate specific surface land uses allowed on BLM-administered lands by Authorized Officers and those surface uses acquired by BLM on lands administered by other entities. These BLM authorizations include ROWs, leases, permits, conservation easements, and recreation and public purpose leases and patents. The rights acquired, reserved, or withdrawn by BLM for specified purposes are for non-oil and gas leases, conservation easements, archaeological easements, road easements, fence easements, and administrative site withdrawals. The existence of such land use authorizations would not prevent surface-disturbing activities. The locations of land use authorizations are noted on the oil and gas plats and in LR2000 (BLM's Legacy Rehost System). The plats are a visual source noting location; BLM's LR2000 website provides location by legal description through the Geographic Cross Reference Program. The specifically authorized acreage for land use should be avoided by developers. All authorized surface land uses are valid claims to prior existing rights unless the authorization states otherwise.

During the ROW grant application process, it would be determined which of the following general BMPs outlined in Appendix F of the *Record of Decision and Approved Lewistown Resource Management Plan* might apply to this action (BLM 2021):

- **F.2.2**: Erosion and Sediment Control Practices: Field Manual
- **F.2.3**: Erosion and Sediment Control Practices: Reference Manual
- **F.2.6**: Montana Nonpoint Source Management Plan
- **F.2.13**: BLM BMPs
- **F.2.20**: Montana Nonpoint Source Management Program

The following reclamation practices outlined in Appendix G of the *Record of Decision and Approved Lewistown Resource Management Plan* would apply to this action (BLM 2021):

- **G.3.1**: Manage All Waste Materials
- **G.3.2**: Ensure Subsurface Integrity and Eliminate Sources of Ground and Surface Water Contamination
- **G.3.3**: Ensure Surface Stability and Reestablish Slope Stability and Desired Topographic Diversity
- **G.3.4**: Reconstruct and Stabilize Water Courses and Drainage Features
- **G.3.5**: Maintain the Biological, Chemical, and Physical Integrity of Topsoil
- **G.3.6**: Prepare Site for Revegetation
- **G.3.7**: Establish a Desired Self-Perpetuating Native Plant Community
- **G.3.9**: Manage Invasive Plants
- **G.3.10**: Develop and Implement a Reclamation Monitoring and Reporting Strategy
- **G.4**: Seeding

A.1.8 AGENCY-SPECIFIC NEPA REQUIREMENTS

It is the intent of BLM to adopt the Sentinel EIS after confirming the adequacy for meeting their NEPA requirements and to prepare their decision document associated with the components of the Proposed Action on BLM-administered land. If BLM receives ROW grant application(s)

during EIS development, a categorical exclusion or an environmental assessment with a finding of no significant impact would be prepared, either of which would incorporate by reference this EIS in whole or in part and rely on the determination of effects it contains. Incidental portions of the Proposed Action also might exist on BLM-administered lands outside the Malmstrom AFB missile field. Applications for those facilities would be directed toward the appropriate field office and managed under the applicable land use plan for that area.

BLM's public circulation timeline for a draft EIS under their agency-specific NEPA requirements is 45 days minimum and 30 days prior to signing a Record of Decision (ROD) for a final EIS. The ROD for a BLM EIS cannot be issued until the later of the following dates: 90 days after the publication of the U.S. Environmental Protection Agency (EPA) notice of filing of the Draft EIS or 30 days after publication of EPA's notice of filing of the Final EIS (40 CFR § 1506.10(b)). The circulation and comment periods established for the Air Force's Sentinel EIS scoping material, Draft EIS, and Final EIS were specifically designed to meet the requirements of both the Air Force and the cooperating agencies, including BLM.

A.1.9 SENSITIVE WILDLIFE AND FISH SPECIES

Table A.1-2 identifies threatened, endangered, candidate/proposed, and BLM sensitive wildlife and fish species with the potential to occur on BLM lands within the Sentinel Project analysis area under the authority of the Lewistown Field Office. Project activities that could affect these species will be coordinated with the BLM and conducted in accordance with BLM Resource Management Plans.

Table A.1-2. Federally Protected and BLM Sensitive Species with the Potential to Occur on BLM Lands within the Sentinel Project Analysis Area under the Authority of the Lewistown Field Office

Species Common and Scientific Name	Status[1]	Potential to occur on BLM-administered lands?	Rationale for exclusion[2]	Brief habitat description and range in Montana
Fish				
Northern redbelly dace x Finescale dace *Phoxinus eos x Phoxinus neogaeus*	S	Yes	N/A	Northern redbelly dace prefer quiet waters from beaver ponds, bogs, and clear streams. The finescale dace likes similar habitat but is also found in larger lakes. Known in Big Coulee Ck in Judith Basin Co.
Paddlefish *Polyodon spathula*	S	No	HAB	Slow or quiet waters of large rivers or impoundments. They spawn on the gravel bars of large rivers during spring high water. Paddlefish tolerate, or perhaps seek, turbid water.
Pallid Sturgeon *Scaphirhynchus albus*	E	No	HAB	Large turbid streams including the Missouri and Yellowstone rivers. They use all channel types, primarily straight reaches with islands. They primarily use areas with substrates containing sand (especially bottom sand dune formations) and fines (93% of observations).

Species Common and Scientific Name	Status[1]	Potential to occur on BLM-administered lands?	Rationale for exclusion[2]	Brief habitat description and range in Montana
Sauger *Stizostedion canadense*	S	Yes	N/A	Larger turbid rivers and the muddy shallows of lakes and reservoirs. They spawn in gravelly or rocky areas in shallow water and seem to prefer turbid water.
Sturgeon chub *Macrhybopsis gelida*	S	Yes	N/A	Turbid water with moderate-to-strong current over bottoms ranging from rocks and gravel to coarse sand.
Westslope cutthroat trout *Oncorhynchus clarki lewisi*	S	Yes	N/A	Gravel substrate in riffles and pool crests for spawning habitat. Cutthroat trout have long been regarded as sensitive to fine sediment.
Amphibians and Reptiles				
Great Plains toad *Bufo cognatus*	S	Yes	N/A	Sagebrush-grassland, rainwater pools in road ruts, in stream valleys, at small reservoirs and stock ponds, and around rural farms; breeding has been documented in small reservoirs and backwater sites along streams; appears to prefer stock tanks and roadside ponds rather than floodplains. Eggs and larvae develop in shallow water, usually clear or slightly turbid, but not muddy.
Western toad *Anaxyrus boreas*	S	No	HAB	Utilize a wide variety of habitats, including desert springs and streams, meadows and woodlands, mountain wetlands, beaver ponds, marshes, ditches, and backwater channels of rivers where they prefer shallow areas with mud bottoms.
Greater short-horned lizard *Phrynosoma hernandesi*	S	Yes	N/A	Ridge crests between coulees, and in sparse, short grass and sagebrush with sun-baked soil; limestone outcrops in canyon bottoms of sandy soil with an open canopy of limber pine-Utah juniper; and are also present on flats of relatively pebbly or stony soil with sparse grass and sagebrush cover.
Milksnake *Lampropeltis triangulum*	S	Yes	N/A	Open sagebrush-grassland habitat and ponderosa pine savannah with sandy soils, most often in or near areas of rocky outcrops and hillsides or badland scarps, sometimes within city limits.
Spiny softshell *Apalone spinifera*	S	Yes	N/A	Primarily a riverine species, occupying large rivers and river impoundments, but also occurs in lakes, ponds along rivers, pools along intermittent streams, bayous, irrigation canals, and oxbows. Open sandy or mud banks, a soft bottom, and submerged brush and other debris. Spiny Softshells bask on shores or on partially submerged logs. They burrow into the bottoms of permanent water bodies, either shallow or relatively deep (0.5–7.0 meters [m]), where they spend winter. Eggs are laid in nests dug in open areas in sand, gravel, or soft soil near water.

Species Common and Scientific Name	Status[1]	Potential to occur on BLM-administered lands?	Rationale for exclusion[2]	Brief habitat description and range in Montana
Western hog-nosed snake *Heterodon nasicus*	S	Yes	N/A	Apparent preference for arid areas, farmlands, and floodplains, particularly those with gravelly or sandy soil, has been noted. They occupy burrows or dig into soil, and less often, are found under rocks or debris during periods of inactivity.
Birds				
American Bittern *Botaurus lentigmosus*	S	No	HAB	Prefers large freshwater wetlands with tall emergent vegetation, such as bulrushes and cattails, occasionally in sparsely vegetated wetlands. Nest is a platform over shallow water made of dried rushes, cattails, and sedges supported by dense emergent vegetation. Forages in marsh vegetation and wet meadows.
Baird's sparrow *Ammodramus bairdii*	S	Yes	N/A	Nest in native prairie, but structure may ultimately be more important than plant species composition. (Nesting has been observed in crested wheat, while smooth brome is avoided.) Areas with little to no grazing activity are required.
Bald eagle *Haliaeetus leucocephalus*	S	Yes	N/A	Near open water, including rivers and streams and lakes; nesting and roosting in large ponderosa pine, Douglas fir, or cottonwood trees in proximity to open water and rivers.
Black tern *Chilodonias niger*	S	No	HAB	Wetlands, marshes, prairie potholes, and small ponds. 30%-50% of the wetland complex is emergent vegetation. Vegetation within known breeding colonies includes alkali bulrushes, canary reed-grass, cattail spp., sedge spp., rush spp., reed spp., grass spp., *Polygonum* spp., *Juncus* spp., and *Potamogeton* spp., indicating a wide variety of potential habitats are usable by Black Terns. Water levels range from about 0.5 m to more than 2.0 m, with most having depths between 0.5 m and 1.0 m.
Black-backed woodpecker *Picoides arcticus*	S	No	HAB	Early successional, burned forest of mixed conifer, lodgepole pine, Douglas-fir, and spruce-fir, although they are more numerous in lower elevation Douglas-fir and pine forest habitats than in higher elevation subalpine spruce forest habitats.
Brewer's sparrow *Spizella breweri*	S	Yes	N/A	Sagebrush, mountain meadows, and mountain shrub habitats; nested in sagebrush averaging 16 inches high. The cover (concealment) for the nest provided by sagebrush is very important.
Burrowing owl *Athene cunicularia*	S	Yes	N/A	Open grasslands, where abandoned burrows dug by mammals such as ground squirrels, prairie dogs, and badgers are available. Black-tailed Prairie Dog and Richardson's Ground Squirrel colonies provide the primary and secondary habitat for Burrowing Owls in the state.

Species Common and Scientific Name	Status[1]	Potential to occur on BLM-administered lands?	Rationale for exclusion[2]	Brief habitat description and range in Montana
Caspian Tern *Hydroprogne caspia*	S	No	HAB	Prefers islands within larger lakes and reservoirs with sandy or stony beach, which are used for nesting. Has been found along rivers, although the area is unknown as a nesting habitat.
Chestnut-collared longspur *Calcarius ornatus*	S	Yes	N/A	Species prefers short-to-medium grasses that have been recently grazed or mowed. Prefers native pastures.
Common Tern *Sterna hirundo*	S	No	HAB	Nests on sparsely vegetated islands in large bodies of water. Nest substrate includes sandy, pebbly, or stony matter surrounded by matted or sparsely scattered vegetation. A BLM Lewistown study showed that the Common Tern selects sites larger than 30 acres with emergent vegetation covering more than 25% of the shoreline with all nesting occurring on islands.
Ferruginous hawk *Buteo regalis*	S	Yes	N/A	Mixed-grass prairie, shrub-grasslands, grasslands, grass-sagebrush complex, and sagebrush steppe.
Flammulated owl *Otus flammeolus*	S	Yes	N/A	Old-growth or mature ponderosa pine, ponderosa pine, and Douglas-fir forests, often mixed with mature aspen, nesting in cavities, feeding on insects.
Forster's Tern *Sterna forsteri*	S	No	HAB	Prefers large marshes with extensive reed beds or Muskrat houses, occasionally along marshy borders of lakes and reservoirs. Nests colonially, close to foraging sites. Sites can be 100 acres with more than 25% vegetation coverage of the shoreline.
Franklin's gull *Larus pipixcan*	S	No	HAB	Preferring large, relatively permanent prairie marsh complexes, the Franklin's Gull builds its nests over water on a supporting structure of emergent vegetation. Nesting is noted to occur in cattails and bulrushes.
Golden eagle *Aquila chrysaetos*	S	Yes	N/A	Nest on cliffs and in large trees (occasionally on power poles) and hunt over prairie and open woodlands. Cliff nests selected for south or east aspect, less than 200 inches snowfall, low elevation, availability of sagebrush/grassland hunting areas.

Species Common and Scientific Name	Status[1]	Potential to occur on BLM-administered lands?	Rationale for exclusion[2]	Brief habitat description and range in Montana
Great gray owl *Strix nebulosa*	S	Yes	N/A	Habitat is dense coniferous and hardwood forest, especially pine, spruce, paper birch, poplar, and second-growth and especially near water. They forage in wet meadows, boreal forests, and spruce-tamarack bogs in the far north and coniferous forest and meadows in mountainous areas. Nest in the tops of large broken-off tree trunks (especially in the south), in old nests of other large birds (e.g., hawk nest) especially in the north, or in debris platforms from dwarf mistletoe, frequently near bogs or clearings. Nests are frequently reused, and the same pair often nests in the same area in successive years.
Greater sage-grouse *Centrocercus urophasianus*	S	Yes	N/A	Tall dense stands of sagebrush; 6–18-inch-high sagebrush-covered benches in June to July (average 213 acres); move to alfalfa fields (144 acres) or greasewood bottoms (91 acres) when forbs on the benches dry out and back to sagebrush (average 128 acres) in late August to early September.
Loggerhead shrike *Lanius ludovicianus*	S	Yes	N/A	Open riparian areas, agricultural areas, grasslands, shrublands, and piñon/juniper woodlands.
Long-billed curlew *Numenius americanus*	S	Yes	N/A	Nests primarily in short-grass or mixed-prairie habitat with flat to rolling topography. Habitats with trees, high density of shrubs (e.g., sagebrush [*Artemisia* spp.]), and tall, dense grass generally. Taller, denser grass used during brood-rearing when shade and camouflage from predators are presumably more important for chicks but may also reflect decline in availability of shorter habitats with season.
Thick-billed longspur *Rhynchophanes mccownii*	S	Yes	N/A	Breeding habitat is a matrix of perennial shortgrass species (e.g., *Bouteloua gracilis and Buchloe dactyloides*) interspersed with cactus and limited cover of midgrasses (e.g., *Aristida longiseta*, *Agropyron smithii*, and *Stipa comata*) and shrubs (e.g., *Gutierrezia sarothrae*, *Chrysothamnus nauseosus*, and *Artemesia frigida*).
Mountain plover *Charadrius montanus*	S	Yes	N/A	Prairie dog colonies and other shortgrass prairie sites are confirmed as preferred breeding habitat. Strong preference was also given to sites with slopes less than 5% and grass height of less than 3 inches.
Peregrine falcon *Falco peregrinus anatum*	S	Yes	N/A	Wide variety of habitats, selects cliff ledges or rock outcroppings for nesting, preferring high, open cliff faces that dominate the surrounding area.

Species Common and Scientific Name	Status[1]	Potential to occur on BLM-administered lands?	Rationale for exclusion[2]	Brief habitat description and range in Montana
Piping Plover *Charadrius melodus*	T	No	HAB	Nests on sand or pebble beaches on freshwater and saline wetlands, lakes, reservoirs, and rivers. Only nests in areas with sparse to no vegetation. Summer range primarily in northeastern Montana with isolated population in Pondera County.
Red-headed woodpecker *Melanerpes erythrocephalus*	S	Yes	N/A	Along major rivers having riparian forest. Open savannah country with ground cover, snags, and canopy cover. Large burns also utilized. Nest in holes excavated 2–25 m above ground by both sexes in live trees, dead stubs, utility poles, or fence posts. Individuals nest in the same cavity in successive years.
Red Knot *Calidris canutus rufa*	T	No	HAB	Annually migrate between arctic tundra breeding grounds and marine wintering habitats in Tierra del Fuego. There are only ~50 observations documented for individuals stopping at Montana wetlands with only zero to four for any given year since the 1970s; 60% of observations have been in May associated with northward migration. Migratory stopovers in Montana are rare but are most common at larger wetlands and 60% of documented migratory stopovers in Montana have been at Freezout Lake, Benton Lake National Wildlife Refuge, and Lake Bowdoin National Wildlife Refuge.
Sagebrush Sparrow *Artemisiospiza nevadensis*	S	Yes	N/A	Prefers the interior of large, contiguous areas of big sagebrush or sagebrush-saltbush habitats. Positively correlated with sagebrush cover, height, and bare ground and negatively correlated with grass cover.
Sage thrasher *Oreoscoptes montanus*	S	Yes	N/A	Sagebrush obligate in Montana. Abundance is generally positively correlated with the amount of sage cover and negatively correlated with grass cover.
Sprague's pipit *Anthus spragueii*	S	Yes	N/A	Native, medium-to-intermediate height prairie and in a short-grass prairie landscape, can often be found in areas with taller grasses. more abundant in native prairie than in exotic vegetation; area sensitive, requiring relatively large areas of appropriate habitat.
Veery *Catharus fuscescens*	S	Yes	N/A	Generally inhabits damp, deciduous forests in the east. Has a strong preference for riparian habitats in several regions, including the Great Plains. Prefers disturbed forest, probably because denser understory is not found in undisturbed forests. In Montana, Veerys are often associated with willow thickets and cottonwood along streams and lakes in valleys and lower mountain canyons.

Species Common and Scientific Name	Status[1]	Potential to occur on BLM-administered lands?	Rationale for exclusion[2]	Brief habitat description and range in Montana
White-faced ibis *Plegadis chihi*	S	Yes	N/A	Freshwater wetlands, including ponds, swamps, and marshes with pockets of emergent vegetation. Also use flooded hay meadows and agricultural fields as feeding locations. Nest in areas where water surrounds emergent vegetation, bushes, shrubs, or low trees. Use old stems in cattails (*Typha* spp.), hardstem bulrush (*Scirpus acutus*), or alkali bulrush (*S. paludosus*) over shallow water as their nesting habitat.
Mammals				
Black-footed ferret *Mustela nigripes*	E	No	ODR	Intimately tied to prairie dogs and found only in association with prairie dogs. Limited to habitat used by prairie dogs: grasslands, steppe, and shrub steppe. Rely on abandoned prairie dog burrows for shelter. Only large complexes (several thousand acres of closely spaced colonies) can support and sustain a breeding population. Estimated that 40–60 hectares of prairie dog colony is needed to support one Black-Footed Ferret, and females with litters have never been found on colonies less than 49 hectares.
Black-tailed prairie dog *Cynomys ludovicianus*	S	Yes	N/A	Colonies are found on flat, open grasslands and shrub/grasslands with low, relatively sparse vegetation. The most frequently occupied habitat in Montana is dominated by western wheatgrass, blue grama, and big sagebrush. Colonies are associated with silty clay loams, sandy clay loams, and loams and fine-to-medium textured soils are preferred, presumably because burrows and other structures tend to retain their shape and strength better than in coarse, loose soils.
Canada lynx *Lynx canadensis*	T	Yes	N/A	Dense spruce-fir, Douglas-fir, early seral lodgepole pine, and mature lodgepole pine with developing understory of spruce-fir and aspen in subalpine zone and timberline, using caves, rock crevices, banks, logs for denning, closely associated with snowshoe hare.
Fringed myotis *Myotis thysanodes*	S	Yes	N/A	Rocky outcroppings in mid-elevation ponderosa pine, piñon/juniper, oak, and mixed conifer woodlands, grasslands, deserts, and shrublands.
Gray wolf *Canis lupis*	S	Yes	N/A	No particular habitat preference except for the presence of native ungulates within its territory on a year-round basis. Gray Wolves establishing new packs in Montana have demonstrated greater tolerance of human presence and disturbance than previously thought characteristic of this species.

Species Common and Scientific Name	Status[1]	Potential to occur on BLM-administered lands?	Rationale for exclusion[2]	Brief habitat description and range in Montana
Grizzly bear *Ursus arctos horribilis*	T	Yes	N/A	Primarily use meadows, seeps, riparian zones, mixed-shrub fields, closed timber, open timber, sidehill parks, snow chutes, and alpine slabrock habitats. Habitat use is highly variable between areas, seasons, local populations, and individuals. Historically, the Grizzly Bear was primarily a plains species occurring in higher densities throughout most of eastern Montana.
Pallid bat *Antrozous pallidus*	S	Yes	N/A	Arid deserts, juniper woodlands, sagebrush shrub-steppe, and grasslands, often with rocky outcrops and water nearby. Arid and semi-arid regions throughout northern Mexico and the western United States. Pallid Bats eat beetles, grasshoppers, and moths, and they forage for slow-moving prey, such as scorpions, flightless arthropods, and sometimes lizards, at and near ground level. Visit flowers in their hunt for insects and are natural pollinators of several species of cactus In south-central Montana.
Spotted Bat *Euderma maculatum*	S	Yes	N/A	Most often in open arid habitats dominated by Utah juniper and sagebrush sometimes intermixed with limber pine or Douglas-fir, or in grassy meadows in Ponderosa pine savannah. Other common habitat attributes are cliffs, rocky outcrops, and water sources. Roosts in caves and cracks and crevices in cliffs and canyons.
Swift fox *Vulpes velox*	S	Yes	N/A	Open prairie and arid plains, including areas intermixed with winter wheat fields in north-central Montana. They use burrows when they are inactive; either dug by themselves or made by other mammals (marmot, prairie dog, or badger). The burrows are usually located in sandy soil on high ground, such as hill tops in open prairies, along fencerows, or occasionally in a plowed field. Suitable habitat is generally extensive in size (preferably over 100,000 acres), with relatively level topography and greater than 50% of the area undisturbed by agriculture. A total of 8 million suitable acres identified in Montana.
Townsend's big-eared bat *Plecotus townsendii*	S	Yes	N/A	Associated with caves and abandoned mines for day roosts and hibernacula, will also use abandoned buildings in western shrubland, piñon/juniper woodlands, and open montane forests in elevations up to 9,500 ft.

Species Common and Scientific Name	Status[1]	Potential to occur on BLM-administered lands?	Rationale for exclusion[2]	Brief habitat description and range in Montana
Wolverine *Gulo gulo luscus*	S	Yes	N/A	Wolverine habitat is characterized by large, mountainous, and essentially roadless forested areas and cottonwood riparian areas. Persistent spring snowpack (generally from April 15 to May 14) is an important factor in determining suitable habitat for wolverine, particularly for den site location. The range of the wolverine in Montana is limited to the western portion of the state, including portions of the missile field.
Plants				
Whitebark pine *Pinus albicaulis*	T	No	HAB	Whitebark Pine is a common component of subalpine forests and a dominant species of treeline and krummholtz habitats. It occurs in almost all major mountain ranges of western and central Montana. Populations of whitebark pine in Montana and across most of western North America have been severely impacted by past Mountain Pine Beetle outbreaks and by the introduced pathogen, white pine blister rust.

Notes: BLM prepared this table based on review of the 2021 U.S. Fish and Wildlife Service species list and the 2020 BLM Montana and Dakotas special status species list (BLM 2020).
[1] Status codes: E = federally listed endangered; S = BLM sensitive; T = federally listed threatened.
[2] Exclusion rationale codes: HAB = no habitat present in Analysis Area; ODR = outside known distributional range of the species; N/A = not applicable, as the species was not excluded; SEA = species not present/affected during season.

A.1.10 REFERENCES

BLM (Bureau of Land Management). 2015. *Lewistown Field Office Greater Sage-Grouse Proposed Resource Management Plan Amendment and Final Environmental Impact Statement*. Accessed 5 May 2021. https://eplanning.blm.gov/eplanning-ui/project/36877/510.

BLM (Bureau of Land Management). 2020. *Bureau of Land Management Montana/Dakotas Special Status Species List 2020*.

BLM (Bureau of Land Management). 2021. *Record of Decision and Approved Lewistown Resource Management Plan*. Accessed 5 May 2021. https://eplanning.blm.gov/eplanning-ui/project/38214/510.

Cascade County. 2014. *Cascade County Growth Policy Update*. Public Works Planning Division, Great Falls, MT.

Chouteau County. 2017. *Choteau County Growth Policy*. County Commission Planning Board, Fort Benton, MT

Fergus County. 2016. *Comprehensive Capital Improvements Plan 2016-2021*. Fergus County, Lewistown, MT.

Judith Basin. 2016. Judith Basin County Growth Policy. Judith Basin County Planning Board, Stanford, MT.

Lewis and Clark. 2004. Lewis and Clark County Growth Policy Volumes 1 and 2. Lewis and Clark County Planning Department, Helena, MT.

Meagher County. 2017. City of White Sulphur Springs Montana Growth Policy. Prepared for White Sulphur Springs and Meagher County. Prepared by CTA Architects Engineers, Red Lodge, MT.

Teton County. 2016. Teton County Growth Policy. Teton County Planning Board, Choteau, MT.

Page intentionally left blank.

A.2 BUREAU OF RECLAMATION SUPPLEMENT

A.2.1 LEAD AND COOPERATING AGENCIES

The Department of the Air Force (Air Force) is the lead agency for the *Environmental Impact Statement for the Sentinel (GBSD) Deployment and Minuteman III Decommissioning and Disposal* (EIS), pursuant to Title 40 of the *Code of Federal Regulations* (CFR) Part 1502. Since the Proposed Action involves access to and activity on land administered by the Bureau of Reclamation (BOR), the Air Force requested their participation in the environmental review process under the National Environmental Policy Act of 1969 (NEPA) (Title 42 of the *United States Code* [U.S.C.] §§ 4321 *et seq*.), as described in the Council on Environmental Quality's NEPA regulations in 40 CFR § 1501.8, *Cooperating Agencies*. BOR agreed to participate as a cooperating agency and to designate the Air Force as the lead agency for National Historic Preservation Act (NHPA) Section 106 responsibilities. The Air Force prepared this agency supplement in cooperation with BOR to facilitate the approval and issuing of a special use permit for right-of-way (ROW) easements, which are required to cross BOR lands under 43 CFR Part 429, *Use of Bureau of Reclamation Land, Facilities, and Waterbodies*, for the proposed Sentinel Project activities on BOR land in Montana. In addition, this agency supplement facilitates BOR's preparation of agency-specific NEPA documentation. The supplemental information and ROW easements will enable the Air Force to conduct the proposed Sentinel Project activities on BOR land.

Since its official designation as a cooperating agency, BOR has supported the effort by (1) participating in the scoping process, (2) developing information and preparing analyses of issues on which BOR has specialized expertise, and (3) making staff support available to enhance interdisciplinary review capability and provide specific comments (40 CFR § 1503.3).

A.2.2 PURPOSE OF AND NEED FOR BOR-RELATED ACTIVITIES

The purpose of and need for the Air Force's Proposed Action are outlined in Section 1.3 of the Sentinel EIS. To gain access to and conduct activities of the Proposed Action on BOR land, the Air Force will apply to BOR for a special use permit using Standard Form (SF) 299, *Application for Transportation, Utility Systems, Telecommunications and Facilities on Federal Lands and Property*. BOR's approval action for the new authorization would enable the Air Force to comply with Public Law 115-232, as outlined in Section 1.3 of the EIS. Considering BOR's multiple use mandate, BOR would decide whether to approve, approve with modification(s), or deny granting the Air Force a special use permit for the Proposed Action.

A.2.3 PUBLIC INVOLVEMENT AND INTERAGENCY COORDINATION

The Air Force published the Notice of Intent for the Sentinel EIS in the *Federal Register* on September 25, 2020, which initiated the public scoping period. Scoping information provided to the public included a general description of the Proposed Action (i.e., installation of utility corridors and refurbishment of existing launch facilities [LFs]). In addition, the Air Force began consultations in compliance with NHPA Section 106, as detailed in Section 1.8.1 of the EIS.

During the scoping process, the Air Force received 148 comments from 55 interested parties. No comments were received that specifically referenced BOR-administered land. Nine comments referenced the installation of the utility corridors and seven referenced off-base construction. In general, these comments requested (1) assessment of environmental effects during construction, (2) confirmation of post-construction restoration, and (3) regulatory compliance and implementation of best management practices (BMPs) during construction. Each comment was reviewed and incorporated either directly or indirectly into its corresponding section of the EIS.

A.2.4 DESCRIPTION OF THE PROPOSED ACTION

The off-base elements of the Proposed Action that would occur on or affect BOR land include establishing approximately 3.2 miles of new utility corridors and refurbishing one LF in Montana (**Figure A.2-1**). The Proposed Action also includes the potential to conduct activities within the 5.3 miles of existing utility corridors on BOR land. The utilities would be installed in a 25-ft- (-ft-) to 100-ft-wide temporary construction ROW along existing roads wherever possible and maintained in a 16.5-ft permanent ROW. In addition, new utilities to support the Sentinel weapon system might be installed on existing aboveground infrastructure (e.g., utility poles) along the same routes as the proposed new utility corridors. LF activities would be confined to areas within the property boundaries; however, approximately 1 acre adjacent to the LF would be used to accommodate temporary storage of construction materials and equipment. Sections 2.1.6.3, 2.1.7.3, and 2.1.8.3 in the EIS describe in detail the proposed utility corridors and associated activities.

A.2.5 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Section 3.0 of the Sentinel EIS details the affected environment and analysis of the environmental consequences associated with the Proposed Action, including those of the off-base elements of the proposed new and existing utility corridors and LF construction proposed on BOR land.

Potential significant adverse effects on cultural resources could result from implementing the overall Proposed Action, including establishing new utility corridors and LF construction, and thus could occur on BOR land. Only a fraction of these elements would be involved, however, reducing the potential for significant effects on cultural resources on BOR land. The Air Force developed a Programmatic Agreement (PA) in consultation with interested Tribes; the Tribal Historic Preservation Officer for the Three Affiliated Tribes of Fort Berthold Indian Reservation, North Dakota; federal agencies that include BOR; the State Historic Preservation Officers for Arizona, Colorado, Montana, Nebraska, North Dakota, Utah, and Wyoming; the ACHP; and other consulting parties that stipulates the efforts to be conducted to identify cultural resources, evaluate any identified resources for significance, and mitigate adverse effects on them. The PA and its stipulations incorporate the elements of the Sentinel Project that would occur on BOR land and would reduce the potential for significant adverse effects on cultural resources. Surveys were conducted of the project areas located on BOR land in 2021, and consultation with Tribes and other consulting parties is ongoing.

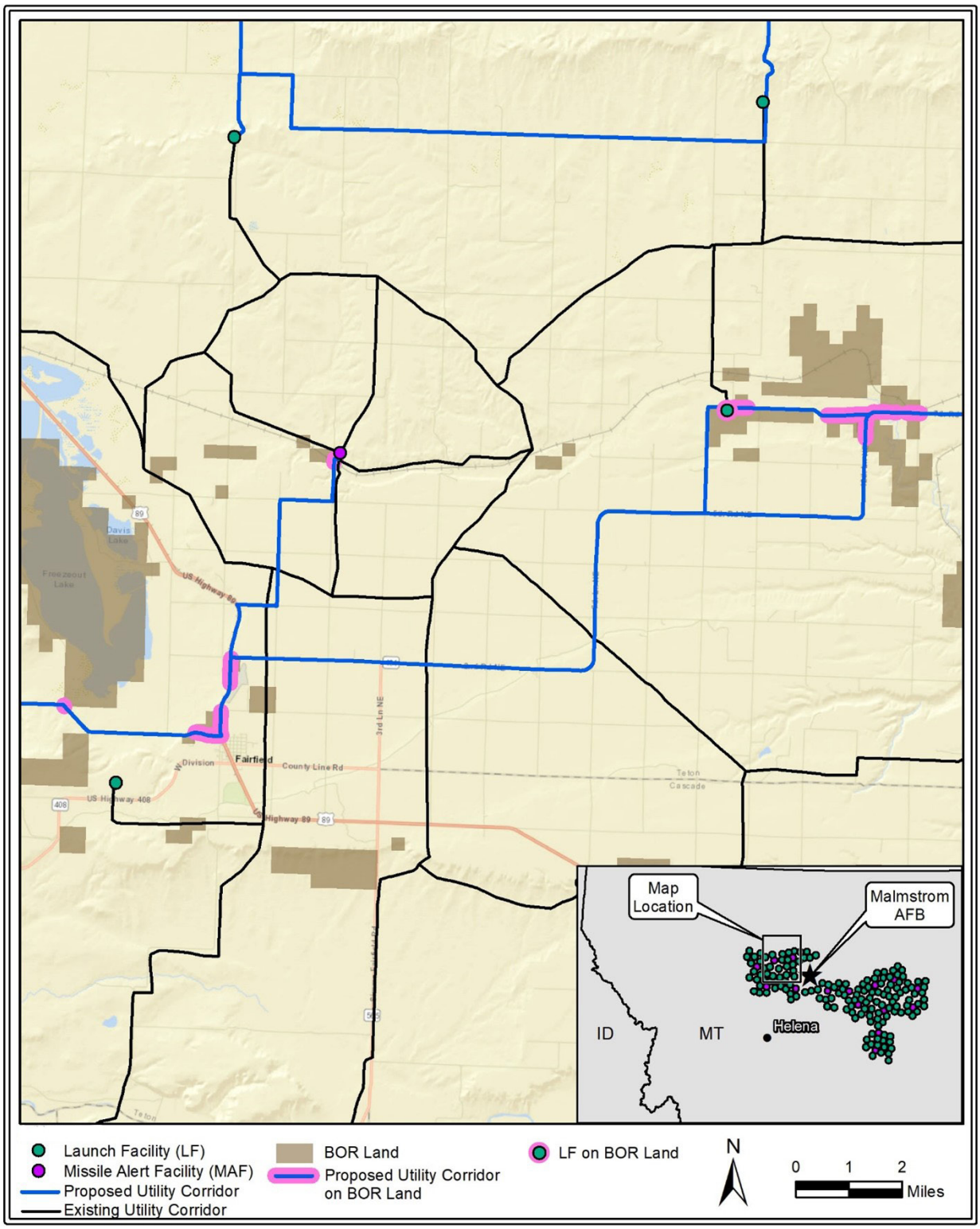


Figure A.2-1 Proposed Utility Corridors and Launch Facility on BOR Land in Montana

The elements of the Air Force's Proposed Action that would be implemented on BOR land would be consistent with BOR's mission to sustain the health, diversity, and productivity of public lands for the use and enjoyment of present and future generations. The Air Force's proposed utility siting would be within the existing roadway corridor and disturbed land.

After a thorough review of the comprehensive and master plans for the counties encompassing the Proposed Action that would be implemented on BOR land, the Air Force identified no county-level proposed projects that would have reasonably foreseeable effects and that would have a reasonably close causal relationship to the Proposed Action (Teton County 2016).

A.2.6 MITIGATION MEASURES

The discussion of each resource area in Section 3.0 of the Sentinel EIS ends by addressing the mitigation measures associated with the Proposed Action. The primary mitigation measures relevant to the Proposed Action on BOR land and elsewhere that the Air Force has identified for each resource area include the following:

- **Air Quality**: Proceed in full compliance with all applicable state-mandated requirements for air quality, such as controlling fugitive dust emissions during construction.
- **Biological Resources**: Follow federal and state guidelines for conducting preconstruction surveys in areas determined to be occupied by or to contain habitat for sensitive biological resources and take precautions to avoid or minimize effects on the resources to the maximum extent practicable.
- **Cultural Resources**: Conduct surveys and implement protective measures for the Proposed Action in accordance with the PA prepared in cooperation with tribal stakeholders, Section 106 consulting parties, and the ACHP.
- **Hazardous Waste Management**: Comply with Department of Defense (DoD) hazardous waste management plans and spill prevention, control, and countermeasure plans to minimize effects from the use of hazardous materials and generation of waste. Ensure BOR standards and practices for hazardous materials are also met when working on BOR lands.
- **Health and Safety**: Prepare and maintain site-specific health and safety plans to minimize effects on worker and public health and safety.
- **Land Use**: To minimize potential effects on land use, locate the utility corridors within or along existing utility corridors and roadways and locate construction areas adjacent to existing facilities.
- **Noise**: Comply with all state and local noise regulations to minimize the potential effects on the noise environment.
- **Soils**: Install compost blankets and silt fences and implement other BMPs for erosion and sediment control.
- **Transportation and Traffic**: To minimize potential effects on transportation and traffic, plan routes and schedules for construction vehicles to minimize potential conflicts with other traffic and continue existing maintenance of defense access roads to missile alert facilities and LFs.
- **Utilities and Infrastructure**: Coordinate with city and county officials to comply with local planning on utilities and infrastructure.

- **Visual Resources**: To minimize potential effects on visual resources, locate utility corridors along existing utility corridors and roadways and locate construction areas adjacent to existing facilities.
- **Water Resources**: Use approved sediment and erosion control measures during construction activities and follow DoD spill prevention and response management plans to minimize potential effects on water resources.

A.2.7 ADDITIONAL CONSIDERATIONS AND REQUIREMENTS

BOR provided the Air Force with information on agency-specific requirements for acquiring easements and resources for the Air Force to consider in preparing its special use permit application for the Proposed Action on BOR land. The BOR special use permit general conditions are listed below.

- **Application**: BOR will require sufficient detail in plans for BOR to have a thorough understanding of the proposed use and design.
- **BOR Land Interests**: BOR administers only BOR land interests. This could include an assortment of ownership interests, such as acquired fee land, acquired easements, patent reservations, and withdrawn land. Some of those interests may involve the Greenfields Irrigation District near Fairfield, MT. Other property interests will need to be coordinated through the respective property owners. BOR's geospatial data shows at least four private landowners that will be affected outside of BOR lands.
- **Permitting**: Part of the Use Authorization application (SF299) process includes the Air Force providing all other permits obtained to complete the proposed project.
- **Land Use Management Plans**: BOR land use and management plans for Montana are generally stored at the Montana Area Office (BOR-MTAO) of Reclamation in Billings, MT. BOR does not have pertinent management plans to offer at this point in time for the particular land parcels in Montana of interest to the Air Force. Once more detailed Air Force designs are received by BOR, further coordination will be conducted with MTAO about how each parcel of land is managed or utilized.
- **Best Management Practices**: In addition to the list of special use permit general conditions, BOR will share a list of BMPs pertinent to the proposed project once BOR receives and approves a use authorization form (SF299) from the Air Force, along with more project design details.
- **Payments**: All payments shall be made to the issuing BOR office on or before the date of issue by a postal money order or a check made payable to the "U.S. Bureau of Reclamation."
- **Use Limitations**: Permitted use is held to the following limitations: (a) is limited to the purposes and premises herein specified; (b) does not unless specified in the permit grant any rights to water; (c) does not, unless provided for in the permit, allow restriction of public entry or uses or to the area; (d) is subject to existing easements, rights-of-way, or reservations; (e) is subject to the right of BOR to grant other permits for the same premises upon a finding by the issuing officer that the additional use is compatible with the use permitted herein; and (f) shall not impede BOR, its agents, or assigns from carrying on whatever activities are necessary to (1) protect and maintain the premises,

facilities, and adjacent lands administered by the United States and its agencies, and (2) manage all resources located on the premises and other BOR lands.

- **Damages**: The BOR shall not be responsible for any loss or damage to property arising from the issuance of this permit, including, but not limited to, damages to growing crops, animals, and machinery; or injury to the permittee or its associates, officers, agents, employees, or any others who are on the premises; or for damages or interference caused by natural phenomena. The Air Force agrees to save BOR or any of its assigns or agencies harmless from any and all claims for damages or losses that may arise from or be incident to any activity associated with this permit. The Air Force also agrees to save BOR, its assigns, and agencies, harmless from any damage to the permittee or third parties resulting from project activities of BOR, its agents, and assigns.
- **Operating Rules and Laws**: The Air Force shall keep the premises in a neat and orderly condition at all times, and shall comply with all municipal, county, state, and federal laws, rules, and regulations applicable to their operations under the permit. Also, to suppress fires, the Air Force shall take all reasonable precautions to prevent the escape of fires and shall render all reasonable assistance in the suppression of fires.
- **Responsibility**: The Air force, by operating on the premises, shall be considered to have accepted these premises with all the facilities, fixtures, or improvements in their existing condition as of the date of this permit. At the end of the period specified or upon earlier termination, the permittee shall give up the premises in like condition as when received except for reasonable wear, tear, or damage occurring without fault or negligence. The Air Force will fully repay BOR for any and all damage, directly or indirectly, resulting from the Air Force's negligence or failure to use reasonable care.
- **Revocation**: (a) Violation: This permit may be revoked on the 10th day following written notice to the Air Force upon a finding by BOR that the Air Force has violated any of the terms herein or made use of the premises for purposes not herein prescribed: provided that if said violation or non-prescribed use of the premises ceases within 10 days of receipt of notice, the Air Force will be allowed to maintain occupancy under this permit. (b) Non-use and project purposes: This permit may also be revoked with 30 days written notice to the Air Force upon a finding by BOR that: (1) the Air Force has failed to use or discontinued use of the premises, or (2) the premises are needed for project purposes. (c) Possession: Upon any such revocation, BOR, by and through any authorized representative, may take possession of said premises for its own and sole use in accordance with Section 10 of the special use permit.
- **Cultural Values**: Should evidence of historical, archaeological, or paleontological sites be discovered during use of the premises, the Air Force shall immediately suspend operations and advise the issuing officer.
- **Compliance**: Failure of BOR to insist upon strict compliance with any of this permit's terms, conditions, and requirements shall not constitute a waiver or relinquish of BOR's right to thereafter enforce any of the permit's terms, conditions, or requirements.
- **Termination**: At the termination of this permit, the Air Force shall immediately give up possession to BOR, reserving, however, the rights specified in Paragraph 10 of the special use permit. Upon failure to do so, the Air Force shall pay BOR, as liquidated damages, an amount double the rate specified in this permit, for the entire time possession is retained. The acceptance of any fee for liquidated damages or any other

act of administration relating to the continued tenancy is not to be considered as an approval of the Air Force's possession.

- **Removal of Air Force's Property**: Upon the expiration, termination, or revocation of this permit, if all rental charges and damage claims due BOR have been paid, the Air Force may remove all structures, machinery, or other property from the premises. Upon failure to remove any of the said property within 60 days of expiration, termination, or revocation, it shall become the property of BOR, and the Air Force shall pay BOR for all expenses related to property removal.
- **Transfer of Privileges**: This permit is not transferable.
- **Refunds**: All money paid under this permit shall be retained by BOR. If Section 6(b)(2) of the special use permit is exercised, the fee paid under this permit shall be refunded by a pro rata share, as determined by BOR.
- **Official Barred from Participating**: No Member of Congress or Resident Commissioner shall participate in any part of this contract or to any benefit that may arise from it, but this provision shall not pertain to this contract if made with a corporation for its general benefit.
- **Nondiscrimination in Employment**: The Air Force agrees to be bound by the equal opportunity clause of Executive Order 11246.
- **Liability**: The permitted activities shall be conducted so as not to interfere with the operation, maintenance, and administration of BOR Projects. Any additional repairs, maintenance, or expense to BOR Projects as a result of the permitted activities shall be reimbursed to BOR by the Air Force. The Secretary of the Interior's determination of such expense shall be final and binding upon the parties hereto.
- **Trespass**: Any use of the premises not herein prescribed shall be considered a trespass. Any violation or trespass on any BOR lands by the Air Force shall be cause for revocation of this permit, in accordance with Section 6(a) of the special use permit. The Air Force shall be liable for any damages resulting therefrom and an approximate charge as determined by the issuing officer shall be made to the Air Force. Any property constructed in trespass shall be considered property of BOR.
- **Disclosure**: In accordance with the Privacy Act of 1974 (PL 93-579), please be advised of the following: (a) Participation is voluntary; however, failure to answer all questions fully may delay processing of this application or result in denial of this permit; (b) information will be used as a criterion for the issuance of special use permits and for identification of personnel having special use permits on BOR lands; (c) in the event there is indicated a violation of a statute, regulation, rule, order, or license, whether civil, criminal, or regulatory in nature, the requested information may be transferred to the appropriate federal, state, or local agency charges with investigation or processing such violations.
- **Security Requirements**: In accordance with BOR's Commissioner's Memorandum of May 30, 2002, the following security provisions shall be followed and shall apply: (a) all event activities will be disclosed to the local law enforcement agency via the facility manager as to the actual date(s), time, expected number of participants; (b) no individual shall be allowed within 100 feet of the facility and/or mission essential vulnerable areas without the written approval of the facility manager. (c) BOR field office and

administrative area restroom facilities shall be off-limits to all unauthorized individuals, as applicable. (d) BOR reserves the right to modify any security measures commensurate with the Office of Homeland Security Advisory System.

A.2.8 AGENCY-SPECIFIC NEPA REQUIREMENTS

It is the intent of BOR to adopt the Sentinel EIS after confirming its adequacy to meet their NEPA requirements and to support a separate decision document to authorize construction, operation, and maintenance of the buried utilities within a ROW. BOR's NEPA documentation is expected to be a categorical exclusion by stating that the activities will be within a transportation corridor, which would incorporate by reference the Air Force's Sentinel EIS in whole or in part and would rely on the determination of effects it contains.

A.2.9 REFERENCES

Teton County. 2016. Teton County Growth Policy. Teton County Planning Board, Chouteau, MT.

A.3 U.S. FISH AND WILDLIFE SERVICE SUPPLEMENT

A.3.1 LEAD AND COOPERATING AGENCIES

The Department of the Air Force (Air Force) is the lead agency for the *Environmental Impact Statement for the Sentinel (GBSD) Deployment and Minuteman III Decommissioning and Disposal* (EIS), pursuant to Title 40 of the *Code of Federal Regulations* (CFR) Part 1502. Since the action involves access to and activity on land administered by the U.S. Fish and Wildlife Service (USFWS), the Air Force requested their participation in the environmental review process under the National Environmental Policy Act of 1969 (NEPA) (Title 42 of the *United States Code* [U.S.C.] §§ 4321 *et seq*.), as described in the Council on Environmental Quality's NEPA regulations in 40 CFR § 1501.8, *Cooperating Agencies*. USFWS agreed to participate as a cooperating agency and to designate the Air Force as the lead agency for National Historic Preservation Act (NHPA) Section 106 responsibilities. The Air Force prepared this agency supplement in cooperation with USFWS to facilitate the processing and administration of approval and issuing of right-of-way (ROW) easements, which are required to cross USFWS wetland, grassland, or conservation easements or fee lands under the National Wildlife Refuge System Administration Act (16 U.S.C. § 668dd(d)), as well as USFWS's preparation of agency-specific NEPA documentation. The supplemental information and ROW easements will enable the Air Force to conduct the proposed activities on USFWS-administered land.

Since official designation as a cooperating agency, USFWS has supported the effort by (1) participating in the scoping process, (2) developing information and preparing analyses on issues on which USFWS has specialized expertise, and (3) making staff support available to enhance interdisciplinary review capability and provide specific comments (40 CFR § 1503.3).

A.3.2 PURPOSE OF AND NEED FOR USFWS-RELATED ACTIVITIES

The purpose of and need for the Air Force's action are outlined in Section 1.3 of the Sentinel EIS. To gain access to and conduct activities of the Proposed Action on USFWS-administered land, the Air Force will apply to USFWS for ROW easements on wetland, grassland, or conservation easements or fee lands in accordance with the National Wildlife Refuge System Administration Act. Regulations covering the granting of ROWs are promulgated in 50 CFR §§ 29.21 and 29.22. USFWS's approval action would enable the Air Force to comply with Public Law 115-232, as outlined in Section 1.3 of the EIS. Considering USFWS's multiple authorized uses, USFWS would decide whether to approve, approve with modification(s), or deny granting the Air Force ROW easements for the Proposed Action.

A.3.3 PUBLIC INVOLVEMENT AND INTERAGENCY COORDINATION

The Air Force published the Notice of Intent for the Sentinel EIS in the *Federal Register* on September 25, 2020, which initiated the public scoping period. Scoping information provided to the public included a general description of the Proposed Action (i.e., installation of utility corridors and construction at the launch facilities [LFs]). In addition, the Air Force began consultations in compliance with NHPA Section 106, as detailed in Section 1.8.1 of the EIS.

During the scoping process, the Air Force received 148 comments from 55 interested parties. No comments were received that specifically referenced USFWS-managed properties. Nine comments referenced the installation of the utility corridors and seven referenced off-base construction. In general, these comments requested (1) assessment of environmental effects during construction, (2) confirmation of post-construction restoration, and (3) regulatory compliance and implementing of best management practices (BMPs) during construction. Each comment was reviewed and incorporated either directly or indirectly into its corresponding section of the EIS.

A.3.4 DESCRIPTION OF THE PROPOSED ACTION

The off-base elements of the Proposed Action that would occur on or affect USFWS-administered land include establishing approximately 160.4 miles of new utility corridors and two new communication towers and refurbishing one missile alert facility (MAF) and nine LFs in North Dakota (**Figure A.3-1**). The Proposed Action also includes the potential to conduct activities within the 20.3 miles of existing utility corridors on USFWS land. The utilities would be installed in a 25-ft- (-ft-) to 100-ft-wide temporary construction ROW along existing roads wherever possible and maintained in a 16.5-ft permanent ROW. In addition, new utilities to support the Sentinel weapon system might be installed on existing aboveground infrastructure (e.g., utility poles) along the same routes as the proposed new utility corridors. LF activities would be confined to areas within the property boundaries; however, approximately 1 acre adjacent to each LF would be used to accommodate temporary storage of construction materials and equipment. Sections 2.1.6.3, 2.1.7.3, and 2.1.8.3 of the Sentinel EIS describe in detail the proposed utility corridors and associated activities.

A.3.5 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Section 3.0 of the EIS details the affected environment and analysis of the environmental consequences associated with the Proposed Action, including those of the off-base elements of the proposed new and existing utility corridors and LF construction proposed on USFWS-administered land.

Potential significant adverse effects on cultural resources could result from implementing the Proposed Action, including establishing new utility corridors, and thus could occur on USFWS-administered land. Only a small fraction of these elements would be involved, however, reducing the potential for significant effects on cultural resources on USFWS land. The Air Force developed a Programmatic Agreement (PA) in consultation with interested Tribes; the Tribal Historic Preservation Officer for the Three Affiliated Tribes of Fort Berthold Indian Reservation, North Dakota; federal agencies that include USFWS; the State Historic Preservation Officers for Arizona, Colorado, Montana, Nebraska North Dakota, Utah, and Wyoming; and the ACHP; and other consulting parties that stipulates the efforts to be conducted to identify cultural resources, evaluate any identified resources for significance, and mitigate adverse effects on them. The PA and the stipulations it contains incorporate the elements of the Sentinel Project that would occur on USFWS-administered land and would reduce the potential for significant adverse effects on cultural resources. Surveys were conducted of the project areas located on USFWS-administered lands in 2021; consultation with Tribes and other consulting parties is ongoing.

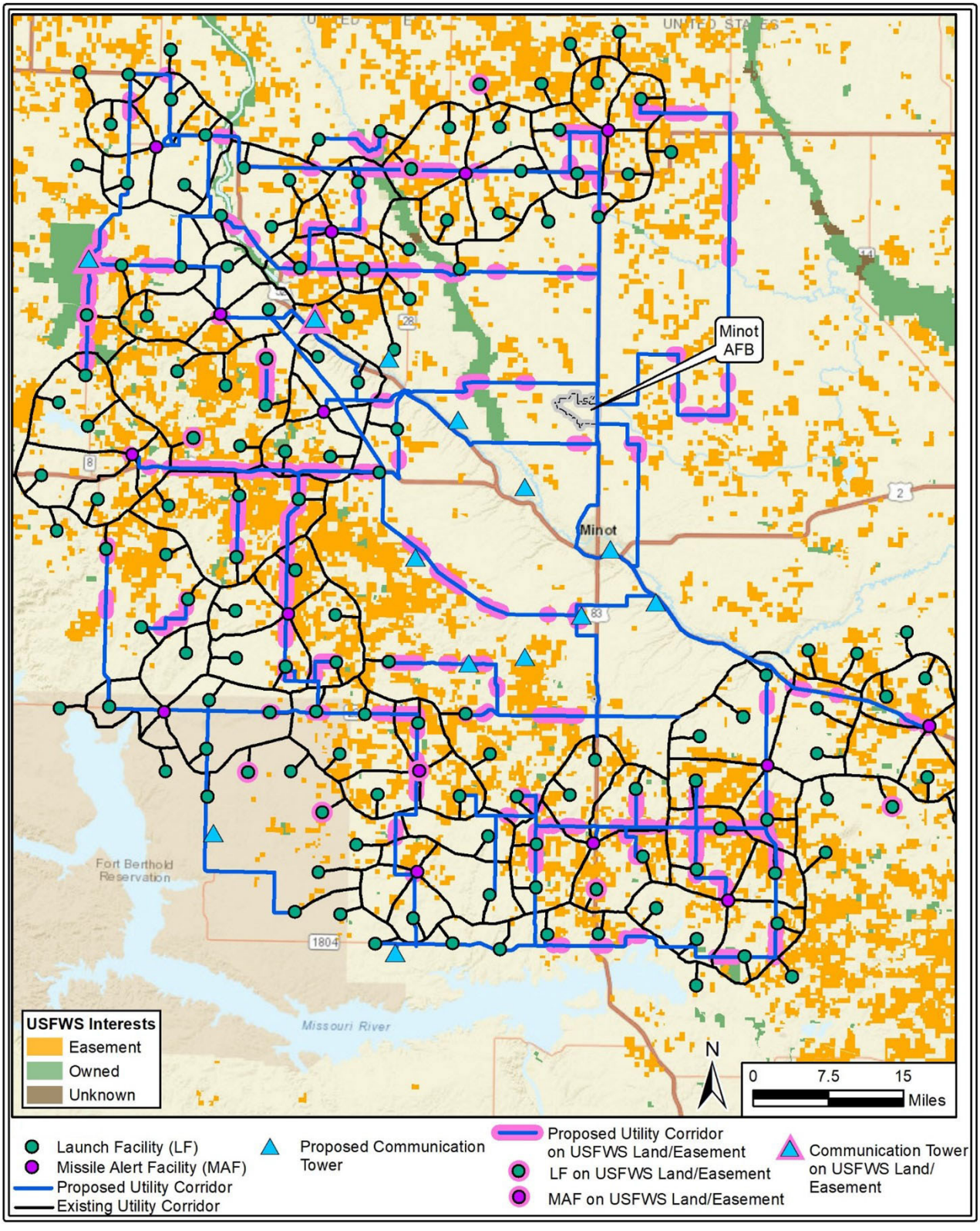


Figure A.3-1 Proposed Utility Corridors, Missile Alert Facility, Launch Facilities and Communication Towers on USFWS-Administered Land in North Dakota

The elements of the Air Force's Proposed Action that would be implemented on USFWS-administered land would be consistent with 50 CFR § 29.21 regulations pertaining to the procedures for filing applications and the terms and conditions under which ROWs over and across the lands administered by the USFWS may be granted. The proposed utility siting would be within the existing roadway corridor and disturbed land.

After a thorough review of the comprehensive and master plans for the counties encompassing the action that would be implemented on USFWS-administered land, the Air Force identified no county-level proposed projects that would have reasonably foreseeable effects and that would have a reasonably close causal relationship to the action (Burke County 2016, McHenry County 2015, Mountrail County 2020, Ward County 2019).

It is anticipated that project roads would not affect the extent of grizzly bear Core habitat within the North Continental Divide Ecosystem (NCDE) in Montana. However, if the project's design requires roads to be constructed in or within 500 meters of Core habitat and could result in effects on the extent of that habitat, or if permanent roads are proposed in or within 500 meters of bear Secure habitat, then consultation with USFWS and the U.S. Forest Service (USFS) would be reinitiated to address this project changed condition. Outside the NCDE, USFS currently considers temporary roads as temporary impacts because of the lack of female grizzly bear occurrences in these areas; and to date, only male bears have been detected within this area. If on-site conditions change and female grizzly bear are identified in this area, however, then consultation with USFWS would be reinitiated to address this changed condition.

A.3.6 MITIGATION MEASURES

The discussion of each resource area in Section 3.0 of the Sentinel EIS ends by addressing the mitigation measures associated with the off-base elements of the Proposed Action. The primary mitigation measures relevant to the Proposed Action on USFWS-administered land that the Air Force has identified for each resource area include the following:

- **Air Quality**: Proceed in full compliance with all applicable state-mandated requirements for air quality, such as controlling fugitive dust emissions during construction.
- **Biological Resources**: Follow federal and state guidelines for conducting preconstruction surveys in areas determined to be occupied by or to contain habitat for sensitive biological resources and take precautions to avoid or minimize and mitigate effects on the resources to the maximum extent practicable.
- **Cultural Resources**: Conduct surveys and implement protective measures for the action in accordance with the PA prepared in cooperation with tribal stakeholders, Section 106 consulting parties, and the ACHP.
- **Hazardous Waste Management**: Comply with Department of Defense (DoD) hazardous waste management plans and spill prevention, control, and countermeasure plans to minimize effects from the use of hazardous materials and generation of waste.
- **Health and Safety**: Prepare and maintain site-specific health and safety plans to minimize effects on worker and public health and safety.

- **Land Use**: To minimize potential effects on land use, locate the utility corridors within or along existing utility corridors and roadways and locate construction areas adjacent to existing facilities.
- **Noise**: Comply with all state and local noise regulations to minimize the potential effects on the noise environment.
- **Soils**: Install compost blankets and silt fences and implement other BMPs for erosion and sediment control.
- **Transportation and Traffic**: To minimize potential effects on transportation and traffic, plan routes and schedules for construction vehicles to minimize potential conflicts with other traffic and continue existing maintenance of defense access roads to missile alert facilities and LFs.
- **Utilities and Infrastructure**: Coordinate with city and county officials to comply with local planning on utilities and infrastructure.
- **Visual Resources**: To minimize potential effects on visual resources, locate utility corridors along existing utility corridors and roadways and locate construction areas adjacent to existing facilities.
- **Water Resources**: Use approved sediment and erosion control measures during construction activities and follow DoD spill prevention and response management plans to minimize potential effects on water resources.

A.3.7 ADDITIONAL CONSIDERATIONS AND REQUIREMENTS

The USFWS provided the Air Force with information on agency-specific requirements and resources to consider in preparing applications for ROW and Archaeological Resource Protection Act (ARPA) permits and any Special Use Permits (SUPs) required to complete the Proposed Action on USFWS-administered land. The agency-specific requirements for USFWS-administered land are listed below.

- **Archaeological Investigations on Fee Title Land**: An Application for Permit for Archaeological Investigations, as required under the ARPA, shall be completed to conduct cultural resource surveys. One application should be submitted, and one permit will be issued to cover all cultural surveys on USFWS fee title lands within a project area. The application should provide detailed information and maps for the surveys. Shovel probing will be allowed, however, there is a “no surface collection policy” on National Wildlife Refuges (NWRs) and Waterfowl Production Areas (WPAs). If there is a compelling reason for a collection, the Air Force should contact the USFWS to discuss options. These options will be coordinated with USFWS archaeologists to determine the appropriate course of action. An SUP also is required to allow access for cultural surveys on NWRs and WPAs. Application/issuance of the SUP and survey schedules should be coordinated with the designated USFWS contact for the project area.
- **Archaeological Investigations on Easements:** No ARPA permit or SUP is required to conduct cultural resource surveys on USFWS easements on privately owned lands. The Air Force should coordinate closely with the landowner and be aware of any state or local laws that might apply, especially those concerning unmarked human graves. Unless otherwise stipulated in state or local laws, the collection strategy for conducting

surveys on private lands should be approved by, and all artifacts returned to, the landowner.

- **Special Use Permits for Construction on Easements and Fee Title Lands**: For construction corridors or sites not covered by a ROW permit, where construction will cause temporary impacts on USFWS wetland and grassland resources, a SUP is required and will be issued for initial construction only. Future maintenance and repairs will require additional review and issuance of a SUP and will be contingent upon appropriate use, compatibility determination, endangered species, cultural resources, and NEPA review and approval. SUPs are issued subject to the revocation and appeals procedure in 50 CFR Part 25. Issuance of a SUP does not preclude the requirement for the Air Force to obtain necessary permits and/or approvals from other local, county, state, or federal agencies or from landowners and tenants, if applicable.
- **Preconstruction On-Site Meeting**: The Air Force will contact the appropriate Refuge Manager before beginning any construction activity on fee title lands and on easements when construction will cause temporary impacts to protected wetland, grassland, or other resources. On-site meetings will be used to confirm construction plans and to minimize and/or avoid impacts to protected resources, where feasible.
- **Construction Activity**: If it is determined that unforeseen impacts on protected resources on USFWS easement or fee title lands may occur after starting construction, the Air Force shall notify the appropriate Refuge Manager before proceeding so that adjustments can be discussed and made that avoid impacts to protected resources, where feasible. Additional stipulations may be added to the existing SUP to address specific concerns or particularly sensitive areas.
- **Post-Construction Inspection**: When construction and restoration work have been completed and before equipment is demobilized, the Air Force will notify the Refuge Manager to inspect the area and determine that cleanup and restoration work meet USFWS requirements.
- **Site Reclamation**: All temporary impacts allowed by a SUP or that occur outside of permitted ROWs within USFWS wetland, grassland, conservation easements and on fee title lands must be restored to prework condition within 30 days of construction being completed. No permanent impacts on easement-protected resources or fee title lands will be permitted.
- **Ground Disturbance**: Construction activities that may result in ground disturbance, primarily in grasslands, on USFWS easement and fee title property should be conducted outside of the primary waterfowl and grassland bird nesting season whenever possible. Primary nesting season is from April 15 to August 1.
- **Borrow Sites**: The Air Force will coordinate with USFWS to ensure proposed borrow site locations for the project (if needed) do not impact USFWS property interests. No borrow/fill will be used from USFWS grassland, conservation easements, or fee title lands.
- **Disturbed Grasslands**: Any disturbed grasslands protected by USFWS easement or fee interest will be restored and reseeded to the appropriate grass mixture as determined by USFWS and the private landowner (PL), when applicable. The Air Force will provide an annual report to USFWS to document the status of reseeded areas until establishment of permanent vegetation is successful as determined by the USFWS/PL.

- **Noxious Weeds**: The Air Force will be required to prevent the establishment and spread of noxious weeds on restored and/or reseeded areas of easement or fee title lands for a period of 5 years. The need for weed control will be determined by USFWS/PL.
- **Trenching**: Additional requirements/BMPs for installation of underground utilities 4–8 ft deep using an excavated trench include the following measures:
    - Use erosion control measures for placement of excavated material.
    - Construct the corridor as narrow as is feasible.
    - Avoid wetlands, native grasslands, and other protected resources or sensitive areas when feasible by routing around or boring.
    - Install corridors within previously disturbed areas or existing ROWs, where feasible.
- **Water Requirements**: If water is needed for construction (e.g., boring, dust control, compaction, etc.), the Air Force will coordinate with USFWS to ensure proposed water sources do not impact USFWS easement-protected or fee-owned wetlands or riparian areas. No water will be used from USFWS wetland or conservation easements or fee title lands without prior review and approval.
- **Equipment and Maintenance**: No storage or disposal of construction materials and equipment will be allowed on easement-protected wetlands or grasslands or on fee title lands unless specifically allowed in the SUP and/or the Special Conditions. All materials brought into the area (e.g., survey aids such as a lath and/or pin flags, erosion/silt control materials, scrap lumber, metal or cable, and litter) must be removed upon completion of the work.

A.3.8 AGENCY-SPECIFIC NEPA REQUIREMENTS

It is the intent of USFWS to adopt the Sentinel EIS after confirming its adequacy to meet their NEPA requirements and to prepare their decision document associated with the elements of the Proposed Action on USFWS-administered land. During EIS development, this level of NEPA documentation is expected to be a categorical exclusion or an environmental assessment with a finding of no significant impact, either of which would incorporate by reference this EIS in whole or in part and would rely on the determination of effects it contains.

A.3.9 REFERENCES

Burke County. 2016. Comprehensive Plan-Roadmap To The Future. North Dakota Century Code Chapter 11. Burke County Planning and Zoning Commission, Bowbells, ND.

McHenry County. 2015. Comprehensive Plan 2015–2035. McHenry County Planning Commission, Towner, ND.

Mountrail County. 2020. Comprehensive Plan Update. Mountrail County Planning and Zoning Department, Stanley, ND.

Ward County. 2019. Ward County Comprehensive Plan. North Dakota Century Code Chapter 11. Board of Ward County Commissioners, Minot, ND.

Page intentionally left blank.

A.4 U.S. FOREST SERVICE SUPPLEMENT

A.4.1 LEAD AND COOPERATING AGENCIES

The Department of the Air Force (Air Force) is the lead agency for the *Environmental Impact Statement for the Sentinel (GBSD) Deployment and Minuteman III Decommissioning and Disposal* (EIS), pursuant to Title 40 of the *Code of Federal Regulations* [CFR] Part 1502. Since the action involves access to and activity on land administered by the U.S. Forest Service (USFS), the Air Force requested their participation in the environmental review process under the National Environmental Policy Act of 1969 (NEPA) (Title 42 of the *United States Code* [U.S.C.] §§ 4321 *et seq*.), as described in the Council on Environmental Quality's NEPA regulations in 40 CFR § 1501.8, *Cooperating Agencies*. USFS agreed to participate as a cooperating agency and to designate the Air Force as the lead agency for National Historic Preservation Act (NHPA) Section 106 responsibilities. The Air Force prepared this agency supplement in cooperation with USFS to facilitate the approval and issuing of a special use permit (SUP) for right-of-way (ROW) easements, which is required to cross USFS lands under Title V of the Federal Land Policy and Management Act of 1976 (FLPMA) (43 U.S.C. § 1761) for the proposed Sentinel Project activities on National Forest System lands in Colorado and Montana. In addition, this agency supplement facilitates USFS's preparation of agency-specific NEPA documentation. The supplemental information and ROW easements will enable the Air Force to conduct the proposed Sentinel Project activities on USFS land.

Since official designation as a cooperating agency, USFS has supported the effort by (1) participating in the scoping process, (2) developing information and preparing analyses on issues in which USFS has specialized expertise, and (3) making staff support available to enhance interdisciplinary review capability and provide specific comments (40 CFR § 1503.3).

A.4.2 PURPOSE OF AND NEED FOR USFS-RELATED ACTIVITIES

The purpose of and need for the Air Force's action are outlined in Section 1.3 of the Sentinel EIS. To gain access to and conduct activities on National Forest System lands, the Air Force will apply for SUPs from USFS. Regulations covering the granting of ROWs are promulgated in 36 CFR § 251.50, *Land Uses, Special Uses Requiring an Authorization*; and Forest Service Manual (FSM) 2710, *Special Use Authorizations*. USFS's approval action would enable the Air Force to comply with Public Law 115-232, as outlined in Section 1.3 of the EIS. Considering USFS's multiple use mandate, USFS would decide whether to approve, approve with modification(s), or deny granting the Air Force a SUP for the Proposed Action.

The USFS, as a cooperating agency, would issue SUPs for those elements of the Sentinel Project on the Pawnee National Grassland (PNG) in Weld County, CO, and the Helena-Lewis and Clark National Forest (HLCNF) in Cascade, Judith Basin, and Lewis and Clark counties, MT. The SUPs and supporting analysis are disclosed in the EIS. This action is specific to National Forest System lands and is an activity implementing a land management plan. Therefore, this specific action is subject to the pre-decisional administrative review (objection) process at 36 CFR Part 218 Subparts A and B. Before issuing SUPs to the Air Force for construction, operation, and maintenance of buried utilities in a ROW on National Forest System

lands, the USFS would consider specific stipulations for the SUPs to protect natural resources and existing infrastructure.

A.4.3 PUBLIC INVOLVEMENT AND INTERAGENCY COORDINATION

The Air Force published the Notice of Intent for the Sentinel EIS in the *Federal Register* on September 25, 2020, which initiated the public scoping period. Scoping information provided to the public included a general description of the Proposed Action (i.e., installation of utility corridors and refurbishment of existing launch facilities [LFs]). In addition, the Air Force began consultations in compliance with NHPA Section 106, as detailed in Section 1.8.1 of the EIS.

During the scoping process, the Air Force received 148 comments from 55 interested parties. No comments that specifically referenced USFS-managed properties were received. Nine comments referenced the installation of the utility corridors and seven referenced off-base construction. In general, these comments requested (1) assessment of environmental effects during construction, (2) confirmation of post-construction restoration, and (3) regulatory compliance and implementing of best management practices (BMPs) during construction. Each comment was reviewed and incorporated either directly or indirectly into its corresponding section of the EIS. No comments were received that specifically referenced National Forest System lands.

A.4.4 DESCRIPTION OF THE PROPOSED ACTION

The off-base elements of the Proposed Action that would occur on or affect USFS land include establishing approximately 74.7 miles of new utility corridors and refurbishing 13 LFs in Colorado and Montana (**Figures A.4-1** and **A.4-2**) and constructing two communication towers within HLCNF in Montana. The Proposed Action also includes the potential to conduct activities within the 55.2 miles of existing utility corridors on National Forest System lands. The utilities would be installed in a 25-ft- (-ft-) to 100-ft-wide temporary construction ROW along existing roads wherever possible and maintained in a 16.5-ft permanent ROW. In addition, new utilities to support the Sentinel weapon system might be installed on existing aboveground infrastructure (e.g., utility poles) along the same routes as the proposed new utility corridors. LF activities would be confined to areas within the property boundaries; however, approximately 1 acre adjacent to each LF would be used to accommodate temporary storage of construction materials and equipment. Sections 2.1.6.3, 2.1.7.3, and 2.1.8.3 of the Sentinel EIS describe in detail the proposed utility corridors and associated activities.

A.4.5 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Section 3.0 of the EIS details the affected environment and analysis of the environmental consequences associated with the Proposed Action, including those of the off-base elements of the new utility corridors and LF construction proposed on National Forest System lands.

Potential significant adverse effects on cultural resources could result from implementing the Proposed Action, including establishing new utility corridors and LF construction, and thus could occur on National Forest System lands. Only a fraction of these elements would be involved, however, reducing the potential for significant effects on cultural resources on National Forest

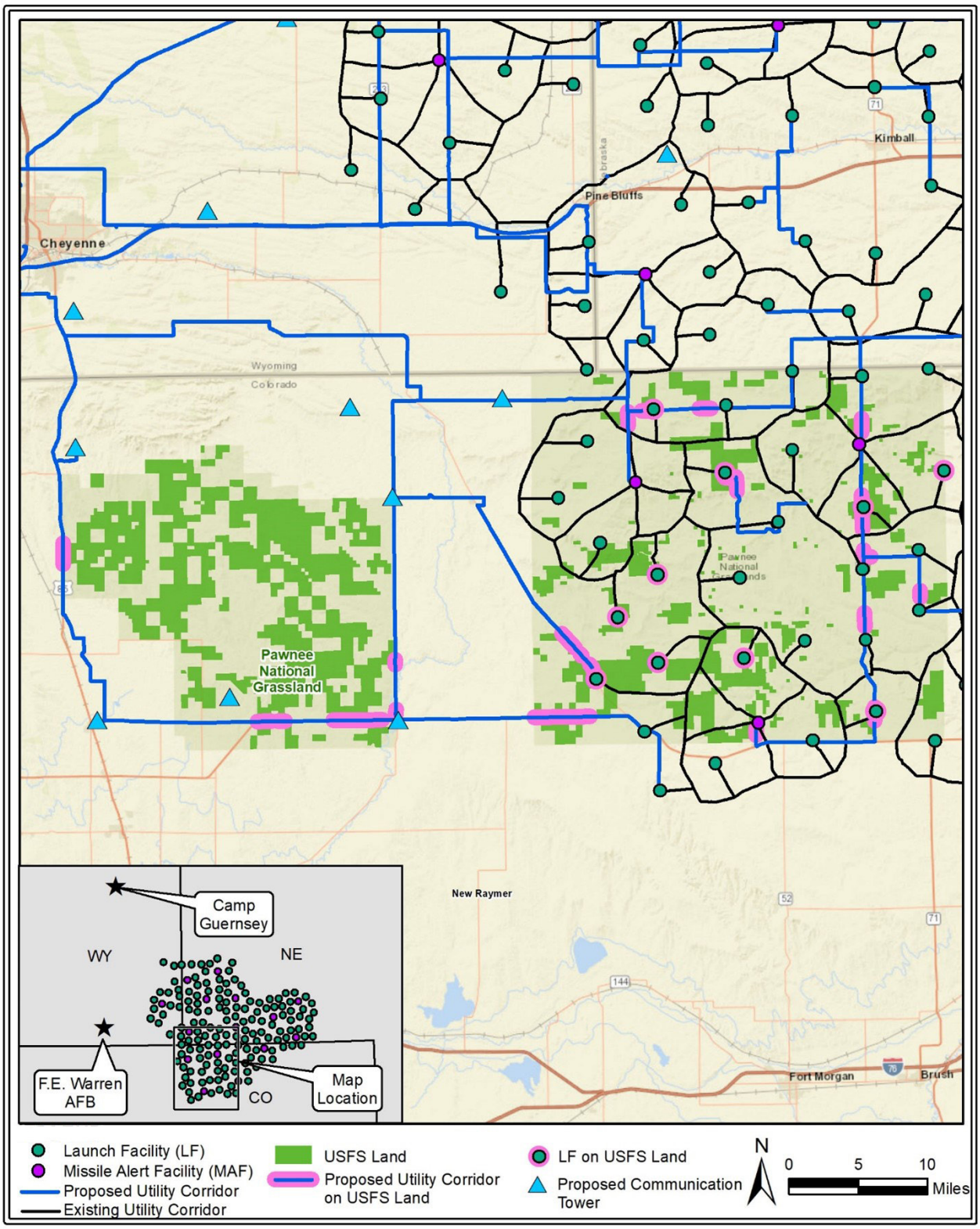


Figure A.4-1 Proposed Utility Corridors and Launch Facilities on USFS Land in Colorado

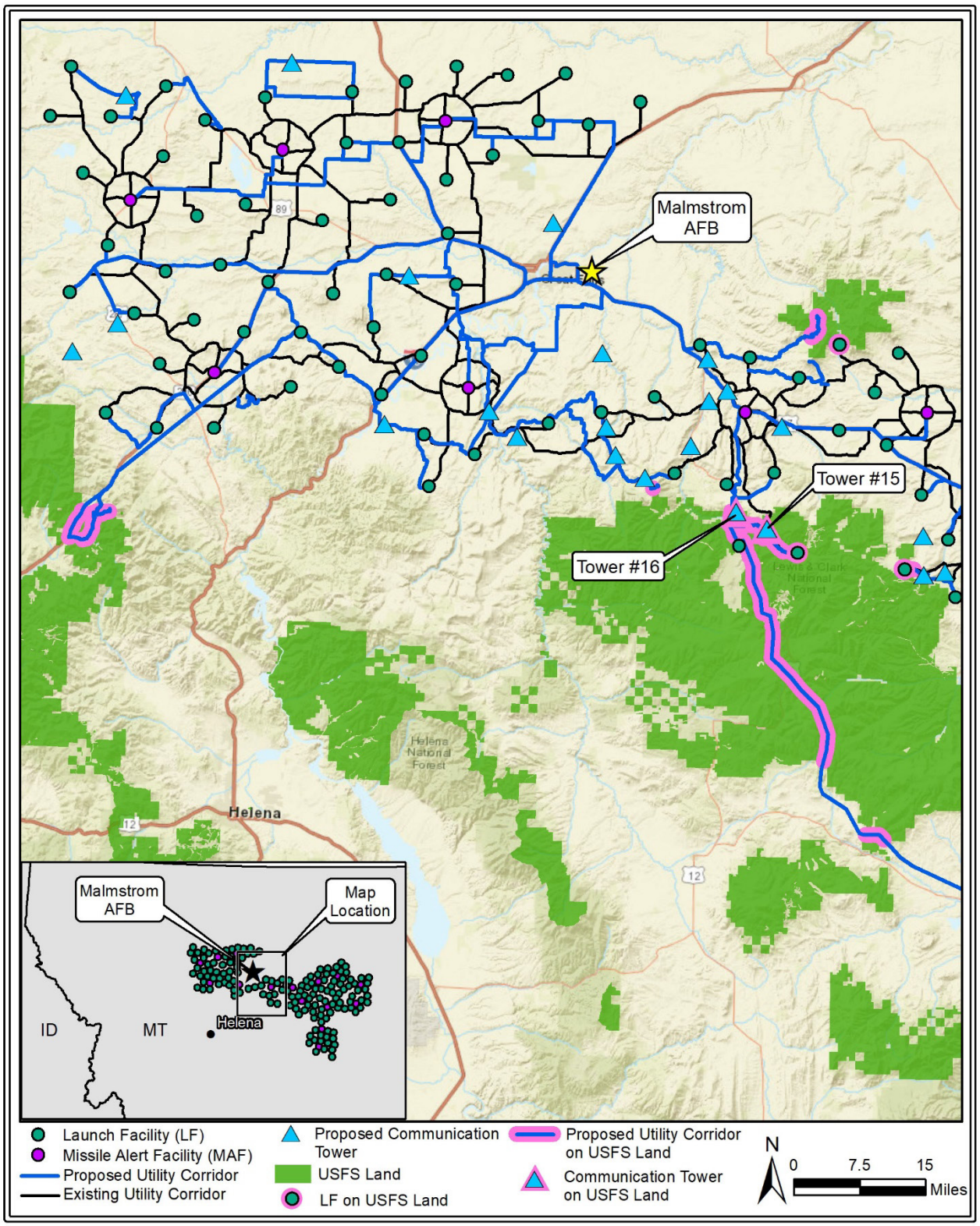


Figure A.4-2 Proposed Utility Corridors, Launch Facilities, and Communication Towers on USFS Land in Montana

System lands. The Air Force developed a Programmatic Agreement (PA) in consultation with interested Tribes; the Tribal Historic Preservation Officer for the Three Affiliated Tribes of Fort Berthold Indian Reservation, North Dakota; federal agencies that include USFS; the State Historic Preservation Officers for Arizona, Colorado, Montana, Nebraska North Dakota, Utah, and Wyoming; and the ACHP; and other consulting parties that stipulates the efforts to be conducted to identify cultural resources, evaluate any identified resources for significance, and mitigate adverse effects on them.

The PA and its stipulations incorporate the elements of the Sentinel Project that occur on USFS land and would reduce the potential for significant adverse effects on cultural resources. Surveys were conducted of the project areas located on USFS land in 2021. Consultation with Tribes and other consulting parties is ongoing.

The elements of the Air Force's Proposed Action that would be implemented on USFS land would be consistent with 43 U.S.C. § 1761 and FSM 2710 regulations pertaining to the procedures for filing applications and the terms and conditions under which ROWs over and across the lands administered by the USFS may be granted. The proposed utility siting would be within the existing roadway corridor and disturbed land.

Sites of the two communication towers proposed within HLCNF are not final and could be adjusted as design plans are developed. If it is determined that the communication towers need to be located on National Forest System lands, however, the USFS Communications Site Management Plan will specify how the sites are designated and how they will be managed (USFS 2022b). This USFS supplement establishes communication tower #15 and #16 "sites" as approved for the construction of communications facilities. Tower #15 also is proposed to be sited in an area designated as grizzly bear Secure habitat. A *Guide to Effects Analysis of Helicopter Use in Grizzly Bear Habitat* has been prepared by a working group of USFS and USWFS biologists (M/NITBT 2009). If helicopters are used for this tower, the Air Force will coordinate with both agencies to ensure that effects on grizzly bears are minimized as much as possible.

It is anticipated that project roads would not affect the extent of grizzly bear Core habitat within the NCDE in Montana. However, if the project's design requires roads to be constructed in or within 500 meters of Core habitat and could result in effects on the extent of that habitat, or if permanent roads are proposed in or within 500 meters of bear Secure habitat, then consultation with USFS and USFWS would be reinitiated to address this project changed condition. Outside the NCDE, USFS currently considers temporary roads as temporary impacts because of the lack of female grizzly bear occurrences in these areas; and to date, only male bears have been detected within this area. If on-site conditions change and female grizzly bear are identified in this area, however, then consultation with USFS would be reinitiated to address this changed condition.

The Nez Perce National Historic Trail (NHT) crosses portions of the project area within the Malmstrom AFB missile field in Montana. USFS is responsible for managing the Nez Perce NHT. There is a Comprehensive Plan for the trail that establishes management goals, objectives, and practices (USFS 2021b). The plan's objectives provide guidance on preserving historic and scenic values, consulting with Tribes, monitoring and evaluation practices, land use and access, and use of trail markers. Preliminary analysis of land parcel data within 250 ft of the

Nez Perce NHT centerline indicates that land ownership along the trail is approximately 94 percent private, 5.4 percent state, 0.55 percent Bureau of Land Management, and 0.1 percent state wildlife area/parks composed of two fishing access sites along Big Spring Creek.

After a thorough review of the comprehensive and master plans for the counties encompassing the action that would be implemented on USFS land, the Air Force identified no county-level proposed projects that would have reasonably foreseeable effects and that would have a reasonably close causal relationship to the action (Cascade County 2014; Judith Basin County 2016; Lewis and Clark County 2004; Weld County 2008).

A.4.6 MITIGATION MEASURES

The discussion of each resource area in Section 3.0 of the Sentinel EIS ends by addressing the mitigation measures associated with the Proposed Action. The primary mitigation measures relevant to the Proposed Action on USFS land that the Air Force has identified for each resource area include the following:

- **Air Quality**: Proceed in full compliance with all applicable state-mandated requirements for air quality, such as controlling fugitive dust emissions during construction.
- **Biological Resources**: Follow federal and state guidelines for conducting preconstruction surveys in areas determined to be occupied by or to contain habitat for sensitive biological resources and take precautions to avoid or minimize effects on the resources to the maximum extent practicable. This includes pre-disturbance botanical surveys for species of conservation concern for the HLCNF, per USFS direction. These species are presented in **Table A.4-1**. The PNG is mandated to evaluate forest sensitive species, as presented in **Table A.4-2**.
- **Cultural Resources**: Conduct surveys and implement protective measures for the action in accordance with the PA prepared in cooperation with tribal stakeholders, Section 106 consulting parties, and the ACHP.
- **Hazardous Waste Management**: Comply with Department of Defense (DoD) hazardous waste management plans and spill prevention, control, and countermeasure plans to minimize effects from the use of hazardous materials and generation of waste.
- **Health and Safety**: Prepare and maintain site-specific health and safety plans to minimize effects on worker and public health and safety.
- **Land Use**: To minimize potential effects on land use, locate the utility corridors within or along existing utility corridors and roadways and locate construction areas adjacent to existing facilities.
- **Noise**: Comply with all state and local noise regulations to minimize the potential effects on the noise environment.
- **Soils**: Install compost blankets and silt fences and implement other BMPs for erosion and sediment control.
- **Transportation and Traffic**: To minimize potential effects on transportation and traffic, plan routes and schedules for construction vehicles to minimize potential conflicts with other traffic and continue existing maintenance of defense access roads to missile alert facilities and LFs.

- **Utilities and Infrastructure**: Coordinate with city and county officials to comply with local planning on utilities and infrastructure.
- **Visual Resources**: To minimize potential effects on visual resources, locate utility corridors along existing utility corridors and roadways and locate construction areas adjacent to existing facilities.
- **Water Resources**: Use approved sediment and erosion control measures during construction activities and follow DoD spill prevention and response management plans to minimize potential effects on water resources.

A.4.7 ADDITIONAL CONSIDERATIONS AND REQUIREMENTS

The USFS provided the Air Force with information on agency-specific requirements for acquiring easements and resources for the Air Force to consider in preparing its SUP application for the Proposed Action on National Forest System lands. The agency-specific requirements for USFS land are listed below.

- **Construction Stipulations**: USFS requires that all construction conform with approved plans, specifications, and stipulations as listed below.
    - The proposed activities shall be conducted in accordance with the plans and specifications set forth in Construction Specifications in Section A.4.9.
    - USFS may suspend all or any part of the construction/reconstruction activities upon breach of any of the conditions herein.
    - The Air Force shall do everything reasonably within its power to prevent forest fires and shall not dispose of material by burning in open fires during the closed season established by law or regulations without a written permit from the USFS.
    - The Air Force shall repair fully all damage to National Forest roads and trails caused by the Air Force in exercise of the privileges granted.
    - The Air Force shall be responsible for the prevention and control of soil erosion and gullying in the construction area and adjacent areas and shall take such preventative measures as are necessary to repair and re-vegetate damaged areas and to prevent future damage.
    - The Air Force shall protect scenic and aesthetic values in the construction area as far as possible.
    - The Air Force shall take reasonable precautions to protect all public land survey monuments and accessories, private property corners, and National Forest boundary markers. In the event that any such land markers or monuments are destroyed, the Air Force shall have them reestablished or referenced by a qualified land surveyor registered in the State of Montana or Colorado as applicable.
    - The Air Force shall maintain a muffler or spark arrester satisfactory to the USFS on the exhausts of all trucks and tractors or other internal combustion engines used in connection with this project.
    - During the fire season, as determined by the USFS, the Air Force shall furnish and maintain in serviceable condition a fire-tool box and fire tools to be used only for suppression of forest fires. The toolbox shall be located at the site and shall contain a shovel, pulaski, or axe.

  - The Air Force shall equip each gasoline power saw at all times with a spark arresting muffler, in good working condition and adapted to that machine. During periods of dangerous fire weather, as determined by the USFS, the Air Force must transport and keep with each power saw at all times such fire tools and portable extinguishers as specified and to take other precautionary measures as may be required by the USFS.
- **EIS Analysis**: Analysis in the EIS should cover all lands affected by the Air Force's proposed activities within the administrative boundary of Pawnee National Grassland or the HLCNF. However, the EIS does not need to address every resource on all lands. Effects on wildlife and air quality, for example, should be analyzed across property lines while effects to plants should be focused on National Forest System land. USFS would provide the list of sensitive species, threatened and endangered species, and indicator species to be considered in the EIS analysis for each forest. No USFS permits/approvals are necessary to conduct biological surveys for the project, but communication should be maintained with USFS specialists. A current permit is required to conduct cultural resources surveys on USFS land and communication shall be maintained with USFS specialists.
- **Forest Plans**: The forest plans relevant to the Air Force's proposed activities are the Arapaho and Roosevelt National Forests and Pawnee National Grassland's Forest (ARP) Plan (https://www.fs.usda.gov/main/arp/landmanagement/planning) and the HLCNF Plan (https://www.fs.usda.gov/main/hlcnf/landmanagement/planning). The Air Force's action is not expected to require any plan amendments.
- **Permitting**: A SUP under authority of FLPMA could be authorized for the proposed activities on USFS land for a term of 50 years. The permit could be replaced after expiration if use continues past the term. The proposed activities should be designed to comply with the mitigations outlined in the Forest Service National Core Best Management Practices, Nonpoint Source Pollution Control for Water Quality Management on National Forest System Lands (FSH 2509.22, Road Management Activities, pp. 116–139). The ARP and HLCNF plans have BMPs outlined for buried utility construction.
- **Resource Areas of Potential Concern**: Resource concerns include noise and light at certain times of the year with respect to nesting/breeding/migrating wildlife; impacts on soil, especially soil loss (wind/water erosion) and compaction; loss of vegetation; impacts on water quality from soil transport; impacts on Forest and Grassland visitors due to traffic on roads or temporary road closures or restrictions during construction, especially at the three LFs on HLCNF as they are located close to public roads with few alternative routes available, if any.
- **USFS Objection Process**: Regulations in 36 CFR Part 218, Subpart B establish a process for members of the public to provide objections to the final Environmental Impact Statement and the Draft Record of Decision (ROD). A notice in the newspaper of record and the *Federal Register* notice will provide procedural direction for informing the public of the objection process and how objections are to be filed, processed, and resolved. The objection filing period for an EIS closes 45 days after USFS publishes a notice in the newspaper of record. Once objections have been received, the timeline for the USFS to publish and post notice of objections filed on the website and review and response to the issues may be up to 75 days. The USFS Reviewing Officer will then issue a final response to the Responsible Official and objectors.

A.4.8 AGENCY-SPECIFIC NEPA REQUIREMENTS

The USFS intends to adopt the Sentinel EIS to meet their NEPA requirements, supporting separate decision documents for the HLCNF and the PNG. It is the intent of USFS to adopt the Sentinel EIS after confirming its adequacy to meet their NEPA requirements and to support two separate decision documents, one signed by the HLCNF Supervisor and one signed by the PNG Supervisor, to authorize construction, operation, and maintenance of the buried utilities within a ROW. The decision documents may be signed after completing the objection process. USFS's decision documents are expected to be signed within 5 months of the Air Force's signed ROD. USFS's NEPA requirements are described at https://www.fs.fed.us/emc/nepa/nepa_procedures/index.shtml.

A.4.9 CONSTRUCTION SPECIFICATIONS

General hours of operation shall occur between 7:00 am and 7:00 pm.

USFS shall be given at least 48 hours' advance notice prior to initiation of the project. A USFS representative may elect to be on-site during construction.

USFS shall approve any relocation or change in construction specifications prior to implementation.

All operations shall comply with applicable federal, state, and local code requirements. The following list of mitigations and BMPs, as specified in FSH 2509.22, should be incorporated.

BMPs

- All required permits would be obtained prior to implementation. A 310 permit will be required for activities that physically alter or modify the bed or immediate banks of a perennial-flowing stream. A CWA 404 permit is required for activities that would result in the discharge or placement of dredged or fill material into waters of the United States, including wetlands. The state Department of Environmental Quality may also require 318 authorization for unavoidable short-term violations of water quality standards for turbidity.
- Dewater the creeks prior to any work in the channel. Dewatering should be conducted to prevent excess sedimentation of the downstream resources and should not be conducted in an unlined trench.
- Bury the utility to a minimum depth of 30 inches below the surface in the area of the stream crossing, including the bed and banks of the stream.
- To minimize the potential for the proposed work to deliver sediment to stream channels, areas of disturbance adjacent to streams or ephemeral drainages should be protected with weed-free straw bales or silt fencing.
- Reclaim disturbed areas to pre-disturbance condition and seed with an appropriate native seed mix.
- Careful operation of equipment should occur to prevent excessive damage to the banks of the creeks. Heavy equipment should not work or be placed in the stream bed or banks unless so approved by the appropriate permitting agencies and/or the USFS.

- Heavy-equipment traffic should not occur during conditions where the road surface is at or near saturation.
- Restabilize and compact the road that is disturbed by the activity.
- Conduct the work so that it does not create erosion-prone situations on the road which could contribute to sediment impacting areas off of the road.
- Stage equipment on existing roads or turnouts. Any areas outside of the existing road prism that are compacted by the staging of equipment should be scarified and reseeded with a weed-free USFS-approved seed mix.
- Clean up fuel or oil spills immediately and dispose of contaminated soil in accordance with state and federal regulations. Clean up all wastes generated on site and dispose of in accordance with state and federal regulations.
- Ensure compliance with any necessary local, state, and federal permits and implement the applicable BMPs as outlined in the Forest Service National Core BMPs.
- Collocate utilities with roads or their ROWs where practicable.
- Limit corridor disturbance, particularly in or near Aquatic Management Zones (HLCNF Riparian Management Zones), surface waters, shallow groundwater, unstable areas, hydric soils, or wetlands.
- Avoid heavy-equipment traffic during conditions where the road surface and/or forest soils are at or near saturation.
- Use design and construction measures that sustain long-term wetland or stream function when a buried transmission line must be placed in a wetland or must cross a stream.
- Ensure that ROWs are properly maintained to minimize damage to USFS resources in the event of an accident or natural disturbance.
- Aggressively address unauthorized uses of the corridor, such as motorized vehicle use, that are exposing soils, increasing erosion, or damaging the facilities.
- Refueling should occur on established roads, as to avoid fuel spills on soils. Fuel spills must be contained and cleaned up promptly and in compliance with state and federal regulations.
- Trees felled inside Riparian Management Zones should be left on-site to achieve aquatic and riparian desired conditions.

General Management Measures

To help minimize the spread of noxious weeds in the area, the Air Force shall be required to furnish the USFS with proof of weed-free equipment. The following is considered proof of weed-free equipment: prior to entry into the project area, clean dirt and material that may carry noxious weed seeds into the project area from all wheeled and track-mounted installation equipment that will be used for this project. Only equipment so cleaned and inspected by the USFS will be allowed to operate within the project area. Pickup trucks are exempt from this requirement. Prior to initial move-in of all equipment, and all subsequent move-ins, the Air Force shall make equipment available for USFS inspection at an agreed location.

Construction operations shall not impede traffic on USFS or Special Use Permitted Private land without prior written consent by the Authorized Officer.

The Air Force shall ensure the driving surface of the USFS or Special Use Permitted Private road(s) is blended with and compacted to its original condition so as to prevent settlement and/or a hazard to those travelling on the roads where construction has occurred.

The Air Force shall contact the Authorized Officer or their representative if utilities burial operations encounter an unusual amount of rock and/or boulders located in the USFS or Special Use Permitted Private roadbed. The roadway will be returned to a safe and drivable condition prior to conclusion of operations for the day. At a minimum, hazard marking signs shall be posted at the site until the hazard has been eliminated and the roadbed restored. In some instances, flaggers may be necessary to control traffic. The disposal or any rock/boulders shall be at the discretion of the Authorized Officer. Ensure utilities are buried to a depth of 42 inches to minimize line disturbance during road maintenance work.

The Air Force agrees not to use any vehicle or conveyance on the USFS or Special Use Permitted Private road when such use would likely cause damage to the road surface. Examples include, but are not limited to, spring break-up, fall rains, immediately following heavy summer thundershowers, when closed by snowpack, or other periods when the road surface is saturated or otherwise subject to damage, or when the USFS has closed the road by special order or for emergency purposes (e.g., forest fires).

The Air Force shall promptly repair, to USFS standards, any and all damage to USFS and authorized private roads caused by the Air Force construction, maintenance or use of the roads, or any appurtenances thereto, including stream crossings and drainage features.

The Air Force shall bury the utilities in accordance with state and/or federal regulatory requirements.

In accordance with clauses referencing Archaeological–Paleontological Discoveries and Native American Graves Protection and Repatriation of the Air Force's special use authorization, cease activities and report any new findings immediately to the USFS.

Wildlife/Grizzly Bear Mitigations

If use of motorized vehicles associated with operations is to occur behind a closed or locked gate or closed road, that gate or road will remain closed to the general public before, during, and after operations.

The Air Force shall report any bear activity on USFS lands to the district wildlife biologist, to include sightings, scat, tracks, hair, prey remains, and diggings. If a grizzly bear is discovered in the area, the district ranger shall be notified for review of the operations to ensure that operations do not result in unauthorized take. This may result in temporary cessation of activities during or after the review.

Although compliance with the food storage order (FSO) is mandatory for all forest users, it is imperative that the Air Force understand the importance of following the order to prevent bear-human conflicts. This includes the storage and/or attendance of food, trash, and attractants. The Air Force shall be given a printed copy of the FSO and the educational brochure prior to commencement of work.

Reseeding of disturbed ground shall not include vegetation species highly palatable by grizzly bears, such as forbs, clover, berries, etc. Standard USFS-approved grass seed mixes would be appropriate for reseeding activities.

Workers shall inspect, remove, and properly dispose of (bag and incinerate) weed seeds and weed plant parts found on their clothing and equipment. Workers shall clean vehicles and equipment and present them for inspection by USFS personnel prior to entering National Forest System lands in the project area.

Seeding Requirements

The Air Force shall apply turf establishment to all disturbed areas within 7 days of completion of ground-disturbing activities. Seeded areas damaged by construction activities shall be reseeded within 10 days of the damage. Do not seed during windy weather or when the ground is excessively wet, frozen, or snow-covered, as determined by the USFS. Ensure that all seed and mulch used in the work conforms to weed-free requirements.

The Air Force shall grade the seeding area to line and grade. Remove all weeds, sticks, stones that are two inches in diameter and larger, and other debris detrimental to application, growth, or maintenance of the turf. Cultivate the seeding area to a minimum depth of 4 inches and prepare a firm but friable seedbed before seeding. Do not cultivate aggregate-topsoil courses that were previously dry seeded.

The Air Force shall utilize a USFS-approved native species seed mix for revegetation purposes. Preserve adjacent vegetation and local native seed sources (adjacent soil, soil and native species on surface of proposed ground disturbance, etc.) as much as is feasible. Noxious weed treatment will be consistent with guidance from the HLCNF Plan.

The Air Force shall apply seed mix by one of the following methods, as approved by USFS:

Dry Method. Apply the seed with USFS-approved power-driven seeders, drills, or other mechanical equipment. Hand-operated seeding methods are satisfactory on areas inaccessible to mechanical equipment.

Hydraulic Method. Use hydraulic-type equipment capable of providing a uniform application using water as the carrying agent. Add a tracer material consisting of either wood or grass cellulose fiber mulch to the water. Apply the tracer material at a rate of 400 pounds per acre to provide visible evidence of uniform application. Add the seed to the water slurry no more than 30 minutes before application. Seed by hand in areas that are inaccessible to seeding equipment.

Seed Mix. Furnish and apply the following kinds and amounts of pure live seed to appropriate sites, or as otherwise directed by USFS:

Common name	Species	Lbs/ac
Mountain brome	*Bromus marginatus*	11.50
Sterile wheat	*Triticale x Secale*	5.75
Tufted hairgrass	*Deschampsia caespitosa*	0.15
Rough bentgrass	*Agrostis scabra*	0.02
Sandberg's bluegrass	*Poa secunda*	0.50
Bluebunch wheatgrass	*Pseudoregneria spicata*	2.75
Idaho fescue	*Festuca idahoensis*	1.00
Blue wildrye	*Elymus glaucus*	1.75
	Percent total:	**23.42**

Whitebark Pine

Utility corridor trenching must remain at least 20 ft from the canopy dripline of designated whitebark pine plus trees.

Utility corridor trenching may not occur within the Spur Park whitebark pine performance test plantation or the no-tree plantation buffer. Equipment operation and/or staging are prohibited within the plantation boundary.

Do not apply soil amendments, such as fertilizer, or herbicide to reseeded utility corridor immediately adjacent to designated whitebark pine plus trees or the Spur Park test plantation. (Amendment to mitigation measure BIO-10 located in Section 6.0 of the Final Sentinel EIS Volume 1).

To the extent possible, avoid removal of whitebark pine in previous planting units.

A.4.10 SENSITIVE SPECIES AND SPECIES OF CONSERVATION CONCERN EVALUATION

FSM 2670.5 defines a "biological evaluation" as a documented USFS review of USFS programs or activities in sufficient detail to determine how an action or proposed action may affect any threatened, endangered, proposed, or sensitive species. A biological evaluation has been prepared for the PNG. Note that the HLCNF presently follows the direction under their recently approved management plan and evaluates species of conservation concern, in lieu of the sensitive species designation. These species are all presented in **Table A.4-1** and **Table A.4-2**.

The species listed in **Table A.4-1** and **Table A.4-2** have been provided by the HLCNF and the PNG as species known or suspected to occur in association with the Proposed Action. **Table A.4-1** was populated using species lists provided by the HLCNF through detailed correspondence between October 2021 and March 2022. **Table A.4-2** was populated using species lists provided by the PNG through extensive correspondence between October 2021 and January 2023.

Table A.4-1. Species of Conservation Concern on the Helena-Lewis and Clark National Forest Anticipated to be Affected by the Proposed Action

Species	Determination	
	Details	Decision (CWFP[1] NE[2])
Animal Species of Conservation Concern		
Flammulated Owl *Otus flammeolus*	With the proposed mitigation measures, construction stipulations, and best management practices (BMPs), the proposed project is **consistent** with the Forest Plan, which was determined to provide the ecological conditions necessary for the long-term persistence of species of conservation concern.	CWFP
Lewis' Woodpecker (*Melanerpes lewis*)	With the proposed mitigation measures, construction stipulations, and BMPs, the proposed project is **consistent** with the Forest Plan, which was determined to provide the ecological conditions necessary for the long-term persistence of species of conservation concern.	CWFP
Plant Species of Conservation Concern		
Austin's knotweed *Polygonum austiniae*	The Proposed Action would have no effect on this species.	NE
Beaked spikerush *Eleocharis rostellata*	The Proposed Action would have no effect on this species.	NE
Blunt-leaved pondweed *Potamogeton obtusifolius*	The Proposed Action would have no effect on this species.	NE
Denseleaf draba *Draba densifolia*	With the proposed mitigation measures, construction stipulations, and BMPs, the proposed project is **consistent** with the Forest Plan, which was determined to provide the ecological conditions necessary for the long-term persistence of species of conservation concern.	CWFP
English sundew *Drosera anglica*	The Proposed Action would have no effect on this species.	NE
Fan-leaved fleabane *Erigeron flabellifolius*	The Proposed Action would have no effect on this species.	NE
Fringed bogmoss *Sphagnum fimbriatum*	The Proposed Action would have no effect on this species.	NE
Giant helleborine *Epipactis gigantea*	The Proposed Action would have no effect on this species.	NE
Howell's gumweed *Grindelia howellii*	The Proposed Action would have no effect on this species.	NE
Kerry's paintbrush *Castilleja kerryana*	The Proposed Action would have no effect on this species.	NE
Lackschewitz' milkvetch *Astragalus lackschewitzii*	The Proposed Action would have no effect on this species.	NE
Lesser rushy milkvetch *Astragalus convallarius*	The Proposed Action would have no effect on this species.	NE
Letterman's needlegrass *Stipa lettermanii*	The Proposed Action would have no effect on this species.	NE

Species	Determination	
	Details	Decision (CWFP[1] NE[2])
Limestone larkspur *Delphinium bicolor ssp. calcicola*	The Proposed Action would have no effect on this species.	NE
Long-styled thistle *Cirsium longistylum*[3]	With the proposed mitigation measures, construction stipulations, and BMPs, the proposed project is **consistent** with the Forest Plan, which was determined to provide the ecological conditions necessary for the long-term persistence of species of conservation concern.	CWFP
Low northern rockcress *Braya humilis*	The Proposed Action would have no effect on this species.	NE
Macoun's gentian *Gentianopsis macounii*	The Proposed Action would have no effect on this species.	NE
Missoula phlox *Phlox kelseyi var. missoulensis*	The Proposed Action would have no effect on this species.	NE
Musk-root *Adoxa moschatellina*	With the proposed mitigation measures, construction stipulations, and BMPs, the proposed project is **consistent** with the Forest Plan, which was determined to provide the ecological conditions necessary for the long-term persistence of species of conservation concern.	CWFP
Northern buttercup *Ranunculus pedatifidus*	The Proposed Action would have no effect on this species.	NE
Northern rattlesnake plantain *Goodyera repens*	With the proposed mitigation measures, construction stipulations, and BMPs, the proposed project is **consistent** with the Forest Plan, which was determined to provide the ecological conditions necessary for the long-term persistence of species of conservation concern.	CWFP
Northern wildrye *Elymus innovatus*	The Proposed Action would have no effect on this species.	NE
Peculiar moonwort *Botrychium paradoxum*	The Proposed Action would have no effect on this species.	NE
Round-leaved orchis *Amerorchis rotundifolia*	The Proposed Action would have no effect on this species.	NE
Scorpidium moss *Scorpidium scorpioides*	The Proposed Action would have no effect on this species.	NE
Short-styled columbine *Aquilegia brevistyla*	With the proposed mitigation measures, construction stipulations, and BMPs, the proposed project is **consistent** with the Forest Plan, which was determined to provide the ecological conditions necessary for the long-term persistence of species of conservation concern.	CWFP
Slenderleaf sundew *Drosera linearis*	The Proposed Action would have no effect on this species.	NE
Small yellow lady's-slipper *Cypripedium parviflorum (Cypripedium calceolus var. pubescens)*	The Proposed Action would have no effect on this species.	NE

Species	Determination	
	Details	Decision (CWFP[1] NE[2])
Sparrow's-egg lady's-slipper *Cypripedium passerinum*	The Proposed Action would have no effect on this species.	NE
Tree-like clubmoss *Lycopodium dendroideum*	The Proposed Action would have no effect on this species.	NE
Water bulrush *Schoenoplectus subterminalis*	The Proposed Action would have no effect on this species.	NE
Wavy-leaved moonwort *Botrychium crenulatum*	The Proposed Action would have no effect on this species.	NE

Notes:
[1] The proposed project is consistent with the Forest Plan (CWFP), which was determined to provide the ecological conditions necessary for the long-term persistence of species of conservation concern.
[2] The proposed project will have no effect (NE) on this species.
[3] Per USFS direction, the long-styled thistle (*Cirsium longistylum*) was included in this analysis. This is an endemic species that is being closely monitored on the HLCNF.

Table A.4-2. Sensitive Species and Management Indicator Species on the Pawnee National Grassland Anticipated to be Affected by the Proposed Action

Species	Status	Determination		
		Details	No impact	MIIH[1]
Terrestrial Wildlife Species				
American Bittern *Botaurus lentiginousa*	FS sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Black-Tailed Prairie Dog *Cynomys ludovicianus*	FS sensitive/ MIS	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Black Tern *Chlidonias niger*	FS sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Brewer's Sparrow *Spizella breweri*	FS sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X

Species	Status	Determination		
		Details	No impact	MIIH[1]
Burrowing Owl *Athene cunicularia*	FS sensitive/ MIS	With the proposed mitigation measures, construction stipulations and BMPs, the Proposed Action may impact individuals or habitat, but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Cassin's Sparrow *Peucaea cassini*	FS sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Chestnut-Collared Longspur *Calcarius ornatus*	FS sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Ferruginous Hawk *Buteo regalis*	FS sensitive/ MIS	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Fringed Myotis *thysanodes*	FS sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Grasshopper Sparrow *Ammodramus savannarum*	FS sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Lark Bunting *Cakanisouza melanicirys*	FS MIS	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Loggerhead Shrike *Lanius ludovicianus*	FS sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X

Species	Status	Determination		
		Details	No impact	MIIH[1]
Long-Billed Curlew *Numenuis americanus*	FS sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Thick-Billed Longspur *Rynchophanes mccownii*	FS Sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Mountain Plover *Charadrius montanus*	FS sensitive/ MIS	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Northern Leopard Frog *Lithobates pipiens*	FS sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Northern Harrier *Circus hudsonius*	FS sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Mule Deer *Odocoileus hemionus*	FS MIS	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Swift Fox *Volpes velox*	FS sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Invertebrates				
Arogos Skipper *Atrytone arogos*	FS sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X

Species	Status	Determination		
		Details	No impact	MIIH[1]
Monarch Butterfly *Danaus plexippus*	FS sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Regal Fritillary *Speyeria idalia*	FS sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Western Bumble Bee *Bombus occidentalis*	FS sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Plant Species				
Wheel Milkweed *Asclepias uncialis*	FS sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Iowa Moonwort *Botrychium campestre*	FS sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Sandhill Goosefoot *Chenopodium cycloides*	FS sensitive	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Aquatic Species				
Northern Redbelly Dace *Chrosomus eos*	FS sensitive	The species is not known to occur within the PNG but could occur in adjacent stream reaches. With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action would have no impact on the population or species because any sediment discharges in the intermittent drainages within the PNG would be adequately captured and arrested and would not extend to adjacent stream reaches.	X	

Species	Status	Determination		
		Details	No impact	MIIH[1]
Plains Killfish *Fundulus zebrinus*	FS sensitive/ MIS	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X
Plains Topminnow *Fundulus sciadicus*	FS sensitive/ MIS	With the proposed mitigation measures, construction stipulations, and BMPs, the Proposed Action may impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.		X

Notes: FS = Forest Service; MIS = management indicator species.
[1] May impact individuals or habitat but would not likely result in a trend toward federal listing or reduced viability for the population or species.

A.4.11 REFERENCES

Cascade County. 2014. Cascade County Growth Policy. Public Works Planning Division, Great Falls, MT.

Judith Basin County. 2016. Judith Basin County Growth Policy. Judith Basin County Planning Board, Stanford, MT.

M/NITBT (Montana/Northern Idaho Level I Terrestrial Biologists Team). 2009. *Guide to Effects Analysis of Helicopter Use in Grizzly Bear Habitat*. Final – Version September 17, 2009.

USFS (U.S. Forest Service). 2021b. Nez Perce (Nee-Me-Poo) National Historic Trail Comprehensive Plan. U. S. Department of Agricultural Forest Service. Accessed September 2022. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd962094.pdf.

USFS (U.S. Forest Service). 2022b. *Sample Communications Site Management Plan*. U.S. Department of Agricultural Forest Service.

Weld County. 2008. Weld County Comprehensive Plan. Chapter 22 of the Weld County Code. Board of County Commissioners, Greeley, CO.

A.5 UNITED STATES ARMY CORPS OF ENGINEERS SUPPLEMENT

A.5.1 LEAD AND COOPERATING AGENCIES

The Department of the Air Force (Air Force) is the lead agency for the *Environmental Impact Statement for the Sentinel (GBSD) Deployment and Minuteman III Decommissioning and Disposal* (EIS), pursuant to Title 40 of the *Code of Federal Regulations* [CFR] Part 1502. Since the Proposed Action involves activities that result in the discharge of dredged or fill material into waters of the United States (WOTUS) and that cross over, through, or under a navigable WOTUS requiring United States Army Corps of Engineers (USACE) permitting; make alterations to, or temporarily or permanently occupy or use USACE federally authorized Civil Works projects; and/or require access to and activity on USACE-administered land, the Air Force requested USACE's participation in the environmental review process under the National Environmental Policy Act of 1969 (NEPA) (Title 42 of the *United States Code* [U.S.C.] §§ 4321 *et seq*.), as described in the Council on Environmental Quality's NEPA regulations in 40 CFR § 1501.8, *Cooperating Agencies*. USACE agreed to participate as a cooperating agency and to designate the Air Force as the lead agency for National Historic Preservation Act (NHPA) Section 106 responsibilities. The Air Force prepared this agency supplement in cooperation with USACE to facilitate the processing and administration of approval and issuing of right-of-way (ROW) easements. The supplemental information and ROW easement will enable the Air Force to conduct the proposed activities on USACE-administered land as well as USACE's preparation of agency-specific NEPA documentation.

Since official designation as a cooperating agency, USACE has supported the effort by (1) participating in the scoping process, (2) developing information and preparing analyses on issues on which USACE has specialized expertise, and (3) making staff support available to enhance interdisciplinary review capability and provide specific comments (40 CFR § 1503.3).

A.5.2 PURPOSE OF AND NEED FOR USACE-RELATED ACTIVITIES

The purpose of and need for the Air Force's Proposed Action are outlined in Section 1.3 of the Sentinel EIS. The project will require the necessary permits for ROW easements on USACE-administered land, but they will not be the only USACE-related activity. USACE has Project Sites that consist of real property under the control of the Army. "Real property" refers to any interest in land, including leaseholds, easements, and ROWs, together with the improvements, structures, and fixtures located thereon.

The USACE Section 408 evaluation process is intended to ensure that any alterations or modifications to a USACE Civil Works project are not injurious to the public interest and do not affect the Civil Works project's ability to meet its authorized purposes. This authority is provided in Section 14 of the Rivers and Harbors Act of 1899, as amended, and codified at 33 U.S.C. § 408 (also known as Section 408). Under Section 408, "USACE project" refers to a USACE federally authorized Civil Works project, including those operated and/or maintained by USACE and those operated and maintained by a nonfederal sponsor. Section 408 authorizes the Secretary of the Army to grant permission for the alteration or occupation or use of a USACE project if the Secretary determines that the activity would not be injurious to the public interest

and would not impair the usefulness of the project. (Minot Air Force Base 408 alterations are covered under Section 408 in the USACE St. Paul District, and Malmstrom Air Force 408 alterations are covered under Section 408 in the USACE Omaha District.)

Through the Regulatory Program, USACE administers and enforces Section 10 of the Rivers and Harbors Act of 1899 (Section 10) (33 U.S.C. § 403) and Section 404 of the Clean Water Act (CWA) (Section 404) (33 U.S.C. § 1344). Under Section 10, authorization from USACE is required for project features that cross over, through, or under navigable waters, or any work that would affect the course, location, condition, or capacity of those waters. Navigable waters (Section 10) must be designated as such by the USACE Division Commander following procedures defined in 33 CFR Part 329 (i.e., the Missouri River in Montana and Upper Des Lacs Lake in North Dakota).

Under Section 404, a permit is required for the discharge of dredged or fill material into WOTUS, including wetlands, on both private and public lands. USACE will respond under the CWA to any application for a permit to dredge or fill waters of WOTUS, including wetlands, for the installation of utilities for the Sentinel project. The term "waters of the United States" has been broadly defined by statute, regulation, and judicial interpretation to include all waters that were, are, or could be used in interstate commerce, such as rivers, streams (including ephemeral streams), canals, reservoirs, lakes, and adjacent wetlands. The USACE Wetlands Delineation Manual dated January 1987 (USACE 1987) and its current supplements must be used to determine if an area has sufficient wetland characteristics to potentially be a WOTUS. Regulatory permits do not grant any property rights or exclusive privileges and do not authorize any injury to the property or rights of others. A regulatory permit does not authorize interference with any existing or proposed federal project.

Many activities with “minimal” impacts on WOTUS can be authorized by general permits and the most common are nationwide permits. On January 13, 2021, USACE published 16 nationwide permits in Part II of the *Federal Register* (86 FR 2744, January 13, 2021), and 41 nationwide permits on December 27, 2021, in the *Federal Register* (86 FR 73522, December 27, 2021), which provide authorization in accordance with Section 404(e) of the CWA. The permits are available for a period of 5 years, currently until March 14, 2026.

Standard (individual) permits are required for activities with more than minimal impacts on WOTUS. Individual permits authorize activities in accordance with Section 404(a) of the CWA. The permit evaluation must be conducted in accordance with Section 404(b)(1) of the CWA as specified in guidelines promulgated by EPA (40 CFR Part 230). No discharge shall be permitted if there is a practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. An alternative is practicable if it is available and capable of being implemented after taking into consideration cost, existing technology, and logistics in light of the overall project purpose. In addition, where a discharge is proposed for a special aquatic site (wetland), all practicable alternatives to the proposed discharge that do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise. Reasonable alternatives as defined under NEPA and practicable alternatives as defined above are not necessarily synonymous because

some reasonable alternatives may not be available to the Proponents. Executive Order 11990, promulgated in 1977 for the protection of wetlands, requires:

> …each agency, to the extent permitted by law, [to] avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds (1) that there is no practicable alternative to such construction, and (2) that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use. In making this finding the head of the agency may take into account economic, environmental and other pertinent factors.

Further,

> When Federally-owned wetlands or portions of wetlands are proposed for lease, easement, right-of-way or disposal to non-Federal public or private parties, the Federal agency shall (a) reference in the conveyance those uses that are restricted under identified Federal, State or local wetlands regulations; and (b) attach other appropriate restrictions to the uses of properties by the grantee or purchaser and any successor, except where prohibited by law; or (c) withhold such properties from disposal.

The Record of Decision (ROD) will define the Preferred Alternative as the only alternative available to the Air Force for which a ROW could be granted on federally managed lands. The Air Force would be required to obtain a ROW on nonfederal lands through negotiated easements or under eminent domain laws. Therefore, ROW granted by the federal agency, supplemented by acquisition of a congruent ROW that can be obtained by the Proponents, will define the only practicable alternative for the project. However, it may be necessary for USACE to evaluate alternatives for specific activities within the ROW, such as tower locations, utility corridors, and road alignments, during the authorization process. The transmission line routes and all related discharges of dredged or fill material regulated under Section 404 and impacts regulated under Section 10 will need to be identified for USACE to make a full consideration of impacts. Unavoidable impacts associated with the transmission lines, missile alert facilities, access roads, and so forth must be identified. Those unavoidable impacts must be minimized, and the remaining impacts identified and included in the Section 10 and Section 404 permit applications. USACE will determine whether authorization of proposed activities by nationwide permits is appropriate or whether certain activities require an individual permit evaluation. Evaluation of practicable alternatives is not applicable to nationwide permit authorizations as specified in 40 CFR § 230.7(b)(1). However, mitigation measures in the form of avoidance, minimization, and compensation would be considered in all permit decisions. Verification by USACE that activities are already authorized by nationwide permits is not a new federal action. USACE would prepare a separate ROD for individual permit authorizations because issuance of a permit would be a new federal action.

A ROW easement across USACE-administered land, a consent to cross a USACE flowage easement, Section 404 permitting under the CWA (33 U.S.C. § 404) for any discharge of dredge or fill material into a water of the U.S. (WOTUS) for all three military installations within the five states of Colorado, Montana, North Dakota, Nebraska, and Wyoming, Section 10 permit under the RHA (33 U.S.C. § 10), and permissions granted by USACE pursuant to Section 408 (33 U.S.C. § 408) for Montana and North Dakota are separate actions within USACE, with each

requiring separate written approval. Where a single action involves two or more approvals, every effort is made by USACE to make the process as seamless as possible. Requirements for a ROW easement involving USACE's regulatory authority under Section 404 and Section 10 would not be expected for the Air Force's Proposed Action to cross USACE-administered land unless wetlands or WOTUS occur in the area. However, dredge or fill activities in WOTUS throughout the project, off USACE-administered lands, will require permitting under Section 404. Section 408 permissions will also occur off USACE-administered lands (Malmstrom and Minot AFBs). Under 10 U.S.C. § 2668 (easements authority) and in accordance with USACE Regulations Governing the Easement Evaluation Process (ER 405-1-12, *Real Estate Handbook*, Chapter 8, Section XIV), the Air Force would apply to USACE for a ROW easement to cross USACE-administered land. USACE's approval action would enable the Air Force to comply with Public Law 115-232, as outlined in Section 1.3 of the Sentinel EIS. Considering USACE's multiple authorized uses, USACE would decide whether to approve, approve with modification(s), or deny granting the Air Force ROW easements on USACE-administered land for the Proposed Action. This would be achieved through Section 408 authorization for ROW easements at Garrison Project at Lake Sakakawea, flowage easements, levees, or other features owned or managed by USACE.

A.5.3 PUBLIC INVOLVEMENT AND INTERAGENCY COORDINATION

The Air Force published the Notice of Intent for the EIS in the *Federal Register* on September 25, 2020, which initiated the public scoping period. Scoping information provided to the public included general descriptions of the proposed action (i.e., installation of utility corridors and construction at the launch facilities). In addition, the Air Force began consultations in compliance with Section 106 as detailed in Section 1.8.1 of the EIS.

During the scoping process, the Air Force received 148 comments from 55 interested parties. No comments were received that specifically referenced USACE-managed properties. Nine comments referenced the installation of the utility corridors and seven referenced off-base construction. In general, these comments requested (1) assessment of environmental effects during construction, (2) confirmation of post-construction restoration, and (3) regulatory compliance and implementing of best management practices (BMPs) during construction. Each comment was reviewed and incorporated either directly or indirectly into its corresponding section of the EIS.

A.5.4 DESCRIPTION OF THE PROPOSED ACTION

The only element of the Proposed Action that would occur on or affect USACE-administered land would be establishing approximately 2.1 miles of new utility corridor and potential to conduct activities within the 5.4 miles of existing utility corridors on USACE land (**Figure A.5-1**). The utilities would be installed in a 25-ft- (-ft-) to 100-ft-wide temporary construction ROW along existing roads wherever possible and maintained in a 16.5-ft permanent ROW. In addition, new utilities to support the Sentinel weapon system might be installed on existing aboveground infrastructure (e.g., utility poles) along the same routes as the proposed new utility corridors. Sections 2.1.6.3, 2.1.7.3, and 2.1.8.3 of the EIS describe in detail the proposed utility corridors and associated activities.

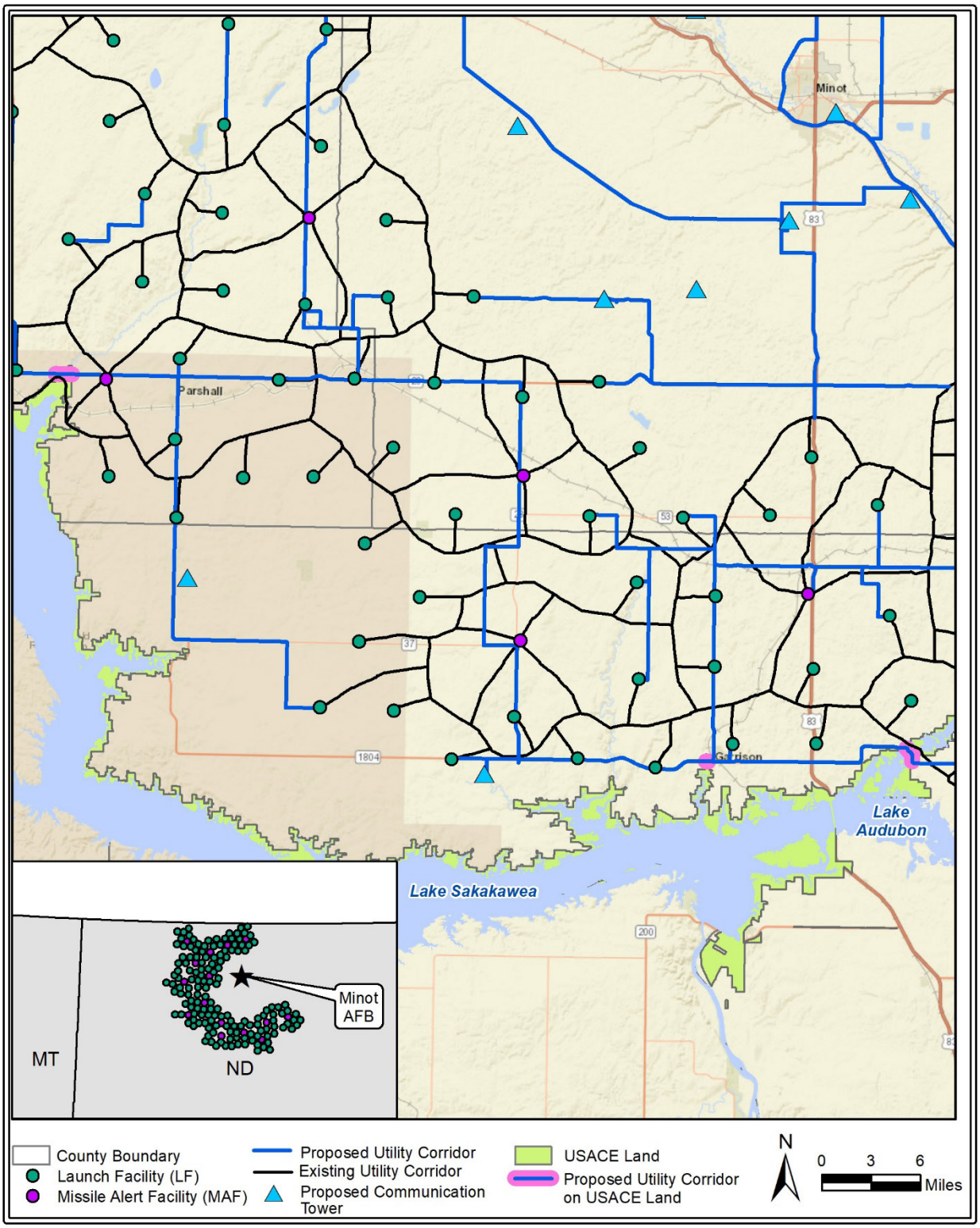


Figure A.5-1 Proposed Utility Corridors on USACE-Administered Land in North Dakota

A.5.5 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Section 3.0 of the EIS details the affected environment and analysis of the environmental consequences associated with the Proposed Action, including the off-base element of the new utility corridors proposed on USACE-administered land.

Potential significant adverse effects on cultural resources could result from implementing the overall Proposed Action, including establishing new utility corridors, and thus could occur on USACE-administered land. Only a small fraction of these elements would be on USACE-administered land, thereby reducing the potential for significant effects on cultural resources on USACE-administered land. The Air Force developed a Programmatic Agreement (PA) in consultation with interested Tribes; the Tribal Historic Preservation Officer for the Three Affiliated Tribes of Fort Berthold Indian Reservation, North Dakota; federal agencies that include USACE; the State Historic Preservation Officers for Arizona, Colorado, Montana, Nebraska North Dakota, Utah, and Wyoming; and the ACHP; and other consulting parties that stipulates the efforts to be conducted to identify cultural resources, evaluate any identified resources for significance, and mitigate adverse effects on them. The PA and the stipulations it contains incorporates the elements of the Sentinel Project that would occur on USACE-administered land and would reduce the potential for significance of adverse effects on cultural resources. Surveys were conducted of the project areas located on USACE-administered lands in 2021; consultation with Tribes and other consulting parties is ongoing.

The element of the Air Force's Proposed Action that would be implemented on USACE-administered land would be consistent with 33 U.S.C. §§ 10, 404, and 408. The proposed utility siting would be within the existing roadway corridor and disturbed land. No wetlands or WOTUS occur in the area based on National Wetland Inventory mapping. Nearby Lake Audubon, however, is a WOTUS. Any potential wetlands adjacent to disturbance areas would need to be ground-truthed to verify presence/absence, as the resolution of the National Wetlands Inventory Mapper is coarse. Based on National Levee Database data, Sentinel Project elements cross or are within 500 ft of approximately nine structures that would require Section 408 permissions, including one in the F.E. Warren AFB missile field, three in the Malmstrom AFB missile field, and five in the Minot AFB missile field (USACE 2012).

The installation of 2.1 miles of new utility corridor and potential to conduct activities within the 5.4 miles of existing utility corridors on USACE land would not be contrary to the public interest; adversely affect endangered species, wetlands, or cultural resources; adversely affect prime facilities such as dams and spillways; adversely affect highly valuable natural resources; conflict with project master plans or other easements; or generate an unreasonable request for easement. After a thorough review of the comprehensive and master plans for the county encompassing the Proposed Action that would be implemented on USACE-administered land, the Air Force identified no county-level proposed projects that would have reasonably foreseeable effects and that would have a reasonably close causal relationship to the Proposed Action (McLean County 2020).

A.5.6 MITIGATION MEASURES

USACE does not maintain a list of BMPs for utilities. The discussion of each resource area in Section 3.0 of the Sentinel EIS ends by addressing the mitigation measures associated with the Proposed Action.

A.5.7 ADDITIONAL CONSIDERATIONS AND REQUIREMENTS

USACE provided information to the Air Force on agency-specific requirements for acquiring easements and resources for consideration in preparing the Air Force's application for a ROW easement for the Proposed Action on USACE-administered land. There are no agency-specific requirements for the Section 404 and Section 10 Regulatory Branch of USACE. In general, if the Proposed Action is located on USACE land or flowage easement, but does not directly affect the dam, spillway, levees, switchyards, or other primary USACE-operated or -constructed infrastructure, the Section 408 review of the action would be minimal and is addressed concurrently with the normal steps associated with a real estate action. The agency-specific requirements for the Garrison Project land are listed below.

- **Preconstruction On-site Meeting**: Prior to the start of construction, the Air Force shall contact the USACE, Garrison Project Office to schedule a preconstruction on-site meeting.
- **Equipment and Maintenance**: The Air Force will ensure that all equipment associated with authorized activities will be staged or stored within the granted premises or off federal lands. Major maintenance of vehicles or equipment is prohibited on federal lands. The refueling of vehicles or equipment shall be in accordance with the Air Force's approved spill prevention plan.
- **Petroleum, Oils, and Lubricants**: Storage of all fuel shall be contained within an impervious containment system that is capable of containing a minimum of 110 percent of the total fuel capacity of the equipment's fuel system. All spills of petroleum, oils, and lubricants greater than 1 gallon must be reported to the Garrison Project. The Air Force will be required to clean up all spills in accordance with instructions provided by USACE, the North Dakota State Health Department, or the Environmental Protection Agency. Prior to initiating the project, the Air Force must provide the Garrison Project with a copy of the grantee's spill containment plan.
- **Project Activity**: Project ROW is to be fenced or marked, and all project activity must remain within the out-granted area.
- **Site Reclamation**: All disturbed areas shall be reclaimed and restored according to the Garrison's Project Standard Operating Procedure #14 (USACE 2011).
- **Notices**: A copy of the Notice of Intent and Stormwater Pollution Prevention Plans will be provided to USACE prior to issuance of out-grant.
- **Noxious Weeds**: All construction equipment will be pressure-washed or air-blasted prior to entering USACE lands to minimize the spread or introduction of noxious weeds.
- **Cultural Resources Discovery**: In the event that archaeological materials and/or human remains are found, all work within 100 ft of the discovery will cease and the Garrison Project Archaeologist shall be notified immediately.

- **Vegetation Reclamation**: Upon completion of construction, topsoil must be distributed over all construction areas. If adequate topsoil is not available, it must be acquired from a certified weed-free source and distributed over the construction area as necessary. Vegetation seeding must be accomplished in accordance with Condition 26, Vegetation Protection (USACE 2011). Erosion control measures must be implemented during and after construction to minimize erosion and entry of sediments into Lake Sakakawea and wetland areas.
- **Infrastructure**: In the event that roads, fences, gates, habitat or other infrastructure are damaged during construction, they must be immediately repaired by the grantee at no cost to the United States or its lessees.
- **Final Inspection**: Upon completion of construction, the grantee must contact the USACE, Garrison Project Office, to schedule a final inspection of the granted lands to ensure all mitigation, restoration, damages, and deficiencies have been completed or corrected.
- **Disposal of Material**: All excess material is to be disposed of off USACE-managed federal lands.
- **Location of Utilities**: The proposed utilities would be located on USACE-administered land.
- **Garrison Project Lands**: For cultural resource survey work proposed on Garrison Project lands, the Air Force will be required to obtain an Archaeological Resource Protection Act permit. For biological/Endangered Species Act and wetland delineation surveys, the Air Force must coordinate with the Garrison Project Senior Field Archaeologist and also the Section 408 Team Lead if more than minor ground disturbance is necessary (e.g., use of a 7/8-inch soil probe or spade for wetland soil sampling).
- **Regulatory**: Either a nationwide permit verification/individual permit or an approved jurisdictional determination/notice of project approval letter would satisfy USACE regulatory requirements (https://www.nwo.usace.army.mil/Missions/Regulatory-Program/). There are no USACE land use or management plans that govern the Air Force's proposed activities.

A.5.8 AGENCY-SPECIFIC NEPA REQUIREMENTS

It is the intent of USACE to adopt the Sentinel Deployment EIS after confirming the adequacy for meeting their NEPA requirements and to prepare their decision document associated with the components of the Proposed Action on USACE-administered land. If an individual permit is necessary, USACE will need to meet 404(b)(1) requirements under 33 CFR 325 Appendix B. During the EIS development, this level of NEPA is expected to be a categorical exclusion or an environmental assessment with a finding of no significant impact, either of which would incorporate by reference this EIS in whole or in part and would rely on the determination of effects it contains.

A.5.9 REFERENCES

McLean County. 2020. Revised McLean County Zoning Ordinance. McLean County Board of Commissioners, Washburn, ND.

USACE (U.S. Army Corps of Engineers). 1987. *Corps of Engineers Wetlands Delineation Manual*, Technical Report Y-87-1. Environmental Laboratory, U.S. Army Engineers Waterways Experiment Station, Vicksburg, MS.

USACE (U.S. Army Corps of Engineers). 2011. Standard Operating Procedure #14, Garrison Project Tree/Vegetation Mitigation. CENWO-OD-GA. U.S. Army Corps of Engineers, Omaha District, Omaha, NE.

USACE (U.S. Army Corps of Engineers). 2012. National Levee Database. Accessed 2022. https://levees.sec.usace.army.mil/#/.

Page intentionally left blank.

APPENDIX B: SCOPING AND DRAFT EIS PUBLIC ENGAGEMENT

Draft EIS Public Comments

Scoping

Draft EIS Review

Page intentionally left blank.

B.1 PUBLIC COMMENTS AND RESPONSES ON DRAFT EIS

Page intentionally left blank.

B.1 SUBSTANTIVE PUBLIC COMMENTS ON DRAFT ENVIRONMENTAL IMPACT STATEMENT AND RESPONSES

This appendix summarizes substantive comments the Air Force received on the *Draft Environmental Impact Statement for the Sentinel (GBSD) Deployment and Minuteman III Decommissioning and Disposal* (Draft Sentinel [GBSD] EIS) and provides the Air Force's responses to them, as required by Title 40 of the *Code of Federal Regulations* § 1503.4. The Air Force received 75 comment submissions containing a total of 240 individual comments on the Draft EIS from federal agencies, state and local governments, public and private organizations, and individuals.

Consideration of Public Comments

The Air Force assessed and considered public comments on the Draft Sentinel (GBSD) EIS, both individually and collectively. Some comments led to modifications of the Final Sentinel EIS. Others resulted in responses to answer or explain policy questions, refer readers to information in the *Final Environmental Impact Statement for the Sentinel Deployment and Minuteman III Decommissioning and Disposal* (Final Sentinel EIS), answer technical questions or explain technical issues, or provide clarification. As applicable, the responses in this appendix identify changes the Air Force made to the EIS as a result of comments.

The following list highlights key aspects of the Air Force's approach to recording, tracking, and responding to public comments on the Draft Sentinel (GBSD) EIS:

- The Air Force reviewed and considered comments it received, including oral comments made during public hearings, to categorize and summarize those comments. As comments were received, they were reviewed and "binned" into issue categories. In some cases, commenters raised multiple issues in one comment submission, in which case an issue code was assigned to each portion of the comment that addressed a separate issue.
- Individual comments were assigned to one or more subject matter experts to prepare responses.
- Comments were summarized to capture the substantive issue(s) raised by each comment on a specific issue and were, of necessity, paraphrased. The Air Force made every effort to capture the essence of the comment included in its comment summary.
- In some instances, a comment and response are related to another comment and response. In these cases, the comment summary is presented but the reader is referred to a previous response.

Many comments received were not substantive to the Draft EIS. These comments are not included in this appendix but are presented separately in **Other Supporting Documentation**, which includes all public comments in their original format and can be found online at gbsdeis.com. Non-substantive comments generally did not address specific issues in the Draft Sentinel (GBSD) EIS or presented opinions without specific reference to Draft EIS content.

Organization of Comment and Response Summaries

This section describes the organization of the comment responses and the tables provided to assist readers in tracking their comments, as appropriate, to the appropriate comment summary and response.

Table B.1.1 lists the two-character codes for issue categories into which the Air Force sorted the comments. To create each comment's identifier (ID) to distinguish it from all the others, a sequential number was added to the comment's issue code. For example, IDs for comments (comment response codes) on air quality are coded as AQ-1, AQ-2, and so forth.

Table B.1.2 lists the single-character codes for affiliation categories into which the Air Force sorted commenters on the Draft Sentinel (GBSD) EIS. To create each commenter's ID to distinguish it from all the others, a sequential number was added to the commenter's affiliation code. For example, IDs for commenters from state agencies are coded as S-1, S-2, and so forth.

Table B.1.3 lists each commenter alphabetically by last name, commenter ID code, how the comment was submitted (e.g., email or letter), the commenter's affiliation (as applicable), and all comment response codes assigned to the separate issues raised in the comment submission that were considered to be substantive comments. For example, looking at the third entry in Table B.1.3, Danielle Arps is identified as Commenter L-1; her comment submission was made through the website; the commenter is affiliated with Teton County, MT; and responses to substantive comments from the submission can be found under the comment response codes PA-9, SE-6, and WR-15. In instances in which one person submitted comments by more than one method (e.g., orally and by email) or by a single method more than one time, that person is listed separately in Table B.1.3 for each submission/submission type, with a unique commenter ID for each one. So, a single commenter might have multiple commenter IDs.

Table B.1.4 provides summaries of substantive comments and the Air Force's responses, organized by issue category.

Table B.1.1. Comment Issue Codes and Categories

Issue Code	Resource/Issue area	Issue code	Resource/Issue area
AQ	Air quality	PA	Proposed action and alternatives
BI	Biological resources	PN	Purpose and need
CU	Cultural	NP	NEPA process
EJ	Environmental justice	NS	National security policies
GE	Geology and soils	BS	Business solicitation
HM	Hazardous materials and wastes	SO	General support or opposition
IN	Utilities and infrastructure	CE	Cumulative Effects
LU	Land use	KI	Keep informed
MI	Mitigation		
SE	Socioeconomics		
TR	Transportation and traffic		
VI	Visual resources		
WR	Water resources		
U	Unclassified		

Table B.1.2. Commenter Codes and Categories

Commenter code	Commenter affiliation
A	Administrative
E	Elected official
F	Federal government
I	Individual
L	Local government
N	Nongovernment organization
S	State government
T	Tribe

Table B.1.3. Commenters with Commenter IDs, and Response Codes for Substantive Comments

Commenter	Commenter ID	Submission method	Affiliation	Response code
Armstrong, Dennis	I-25	Website		CE-1
Arnold, Gerald	I-12	Oral		
Arps, Danielle	L-1	Website	Teton County MT	PA-9, SE-6, WR-15
Barta, Cathy	I-14	Oral		HM-2, BI-21, BI-22
Barta, Cathy	N-5	Email	Snowy Mountain Development Corporation, Lewistown, MT	BI-29, HM-4, LU-4, SO-18
Barta, Cathy	N-12	Email	Snowy Mountain Development Corporation, Lewistown, MT	BI-30
Barta, Cathy	N-16	Letter	Snowy Mountain Development Corporation, Lewistown, MT	LU-5, MI-2
Bauman, Brad	N-3	Oral	Sun River Cooperative, MT	
Best, Steven	S-5	Email	North Dakota Water Resources	WR-22, WR-23, WR-25
Brunkhorst, Dan	F-5	Email	BLM, North Central Montana District	AQ-8, BI-1, BI-2, CU-1, CU-2, EJ-1, GE-1, IN-7, LU-1, LU-2
Butcher, Ross	E-4	Oral	Commissioner, Fergus County, MT	
Comer, Matt	F-6	Email	BLM, North Central Montana District	BI-3, BI-4, BI-5, BI-6, BI-7, BI-8, BI-9, BI-10, BI-11, BI-12, BI-13, BI-14, BI-15, BI-16, BI-17
Cox, Kendall G.	I-7	Letter		
Currit, Richard	S-1	Email	Wyoming State Historic Preservation Office	CU-4
Davis, Logan	I-18	Oral		PA-6, SO-7
Descheemaeker, Paul	I-15	Oral		BI-23
Etzwiler, Shane	N-2	Oral	Great Falls Area Chamber of Commerce, MT	BI-27
Flint, Tage	N-14	Email	Utah Defense Alliance	
Folden, Tim	I-10	Letter		BI-18, BI-19, BI-20, GE-2, HS-3, WR-7, WR-8, WR-9
Ford, Jerry Ruth Birds Bill	I-20	Oral		
Gamo, Scott	S-2	Email	Wyoming Department of Transportation	TR-4

Commenter	Commenter ID	Submission method	Affiliation	Response code
Glatt, L. David	S-3	Letter	North Dakota Department of Environmental Quality	HM-5, HM-6, WR-16, WR-17, WR-18,WR-19
Gordon, Mark	S-11	Letter	Governor, State of Wyoming	
Hamilton, Steven	S-6	Oral	Montana DNRC, Lewistown Region	WR-26
Harvey, James	L-3	Email	Weber County, UT	
Heart, Nelson	T-2	Oral	Police Chief, MHA Nation	HS-6, PA-14
Henderson, Diedre	S-7	Email	Office of the Lieutenant Governor, State of Utah	
Hill, Jean	N-4	Website	Catholic Diocese of Salt Lake City, UT	NS-9
Holmes, Stanley	I-26	Website		
Hudson, Sara	N-6	Oral	Snowy Mountain Development Corporation, Lewistown, MT	SE-8
Jewell, Michael S.	F-9	Letter	Chief, Regulatory Division, USACE, Sacramento District	
Johnson, Jon	I-8	Website		WR-6
Joska, Anton P. (Tony)	I-28	Letter		GE-5, TR-3
Kerr, Rick	I-27	Email		
Kotynski, Tom	I-9	Email		
Kreuter, Catherine	N-10	Oral	Utah Campaign to Abolish Nuclear Weapons	
Langman, Deanna	N-9	Oral	Big Sky Economic Development	
Legerski, Erica	I-22	Website		BI-24, BI-25, BI-26, GE-3, GE-4, WR-11, WR-12, WR-13, WR-14
Lozano, VelRey	F-3	Email	NEPA Program Lead Reviewer, USEPA	AQ-1, AQ-2, AQ-3, AQ-4, AQ-5, AQ-6, AQ-7, HM-1, IN-1, IN-2, IN-3, IN-4, IN-5, IN-6, WR-1
Marriott, Daniel	I-23	Website		SO-8
Marsden, Bruce	I-24	Website		SE-5
Martin, Dan	I-2	Website		
Martin, Dan	I-3	Email		
Mayernik, Stephen	I-6	Letter		
Metzler, Jade	F-4	Email	USACE, Omaha District	WR-2, WR-3, WR-4, WR-5
Meyer, Dan	I-13	Oral		

Commenter	Commenter ID	Submission method	Affiliation	Response code
Miller, John	S-9	Email	Nebraska Department of Natural Resources	BI-33, LU-8, WR-27, WR-28, WR-29, WR-30, WR-31
Niemeyer, Lucian	N-15	Website	United Coalition for Advanced Nuclear Power	PA-11
Odegaard, Larry H.	I-5	Letter		
Orms, Sarah	I-21	Letter		SE-4, VI-1
Orn, Chad	S-4	Letter	North Dakota Department of Transportation	TR-6
Ostberg, Earlene	I-29	Email		
Peterson, Jade Brunkhorst, Dan	F-7	Email	BLM, North Central Montana District	PA-2
Peterson, Jade	F-8	Email	BLM, North Central Montana District	IN-8
Petro, Joy	E-3	Email	Mayor, Layton City, UT	
Potts, Karen	I-1	Website		
Prehn, John	N-11	Oral	Utah Campaign to Abolish Nuclear Weapons	
Purdy, Garrett	I-11	Oral		
Sawyer, Deb	N-13	Website	Utah Campaign to Abolish Nuclear Weapons	
Schroeder, Glenn	F-1	Website	U.S. Department of the Interior	
Shephard, Mark	E-1	Email	Mayor, Clearfield City, UT	
Spangelo, Kayla	S-8	Website	North Dakota Department of Trust Lands	LU-7
Spencer, Bruce	I-17	Oral		HS-1, HS-4
Stark, Douglas	N-17	Letter	Utah Campaign to Abolish Nuclear Weapons	
Stevenson, Bob	E-2	Email	Commission Chair, Davis County, UT	
Sweeney, Carson	N-1	Website	Fergus Electric Cooperative, Lewistown, MT	N-10
Sweeney, Carson	N-7	Oral	Fergus Electric Cooperative, Lewistown, MT	
Trainer, Cody	S-10	Email	Wyoming Game and Fish Department	BI-34, BI-35, BI-36, BI-37, BI-38, BI-39
Van Haur, Jerry	I-16	Oral		TR-1
Vaughn, Rick	L-2	Oral	Sheriff, Fergus County, MT	HS-5
Wheatley, Carly	N-8	Oral	Snowy Mountain Development Corporation, Lewistown, MT	

Commenter	Commenter ID	Submission method	Affiliation	Response code
Whirry, Gordon	I-4	Website		
White Bear, Sharon	I-19	Oral		CU-3, HM-3, NP-1, PA-7, WR-10
White Bear, Sharon	T-1	Website		CU-5, LU-9, WR-36

Note: If there is no response code, the comment provided was not deemed substantive to the content of the EIS. Copies of all comments received in their original format as well as the transcripts from each of the public hearings are provided in the Other Supporting Documentation file, which is available online at gbsdeis.com.

Table B.1.4. Summaries of Substantive Comments and Responses

AIR QUALITY

Comment response code	Commenter ID	Comment summary	Response
AQ-1	F-3	Commenter states that the EIS approach of characterizing existing air quality conditions as whether an area is in attainment or nonattainment of National Ambient Air Quality Standards (NAAQS) does not establish a useful baseline for assessing the impacts of the alternatives. Commenter recommends using the latest 3 years of available monitoring data as design values for each criteria pollutant relative to the NAAQS, which would show how close an area is to the NAAQS. Commenter states this would provide a basis to determine whether additional pollutant emissions might affect air quality. Commenter also recommends working with states and the U.S. Environmental Protection Agency (EPA) to provide data that best represents air quality near planned activities.	Air monitoring data for all states associated with the Proposed Action were added to Appendix D and referenced in the main body of the Final Sentinel EIS. Notably, the air data available are not representative of the air quality in the missile fields and there would be no new major sources of air emissions or appreciable permitting requirements associated with the Proposed Action. Therefore, no air monitoring or dispersion modeling was conducted, and a direct comparison to the monitoring data for an effects determination would not be feasible. A qualitative description of limited increases in pollutant concentrations near construction sites also was added to the Final EIS. The Air Force and the individual installations will continue working with states and EPA to ensure any new source would be permitted as necessary and that all regulatory requirements are met.
AQ-2	F-3	Commenter states that air quality related values are important for characterizing areas where there are sensitive resources, particularly Class I areas managed by Federal Land Managers and Class II areas where visibility and deposition may be important considerations, such as the Pawnee National Grassland. Commenter recommends identifying Class I and Class II areas proximal to project areas.	A description of Class I and Class II areas and potential effects on visibility and deposition were added to the Final Sentinel EIS. Class I areas designated by Congress in 1977 require special protection, including visibility and resources sensitive to deposition. These areas include national parks and certain wilderness areas (e.g., some national forests) that are subject to visibility protection under EPA's Regional Haze Rule and the Clean Air Act (CAA). Areas within the national parks and the certain wilderness areas not designated as Class I areas are considered Class II areas, which have a lower threshold for protection. The CAA also charges Federal Land Managers of Class I areas with protecting air quality-related values in the wilderness areas larger than 5,000 acres in existence as of August 7, 1977. Protection of Class I lands is specifically enabled through prevention of significant deterioration (PSD) provisions of the CAA. Class I areas are managed through the park's or forest's land management plans, with particular regulatory rules under the PSD permitting programs for coordination for nearby proposed major stationary sources of air emissions.

Comment response code	Commenter ID	Comment summary	Response
			There are no Class I areas in or adjacent to F.E. Warren Air Force Base (AFB) or its missile field, and requirements such as land use management plans, regional haze rules, or PSD review of major new sources do not apply. Three missile alert facilities (MAFs) and 29 launch facilities (LFs) are within the Pawnee National Grassland and a mix of U.S. Forest Service (USFS), State of Colorado, and private lands. The grassland is a Class II area, primarily an open space/ recreation land use area, with agricultural uses mainly in the northwest and southern portions. There are no existing land management requirements related to air quality, haze, or deposition for the grassland. There are no Class I areas in or adjacent to Malmstrom AFB or its missile field, and requirements such as land use management plans, regional haze rules, or PSD review of major new sources do not apply. Some LFs are situated within forested and mountainous areas with forest and limited agricultural land uses. Some MAFs and LFs are within the Helena-Lewis and Clark National Forest lands. The national forest is a Class II area, primarily forest, agriculture, and recreation mixed uses. There are no existing land management requirements related to air quality, haze, or deposition for the forests. There are no Class I or Class II areas within or adjacent to Minot AFB or its missile field, and requirements such as land use management plans, regional haze rules, or PSD review of major new sources do not apply. There are no Class I or Class II areas within or adjacent to Hill AFB or the Utah Test and Training Range (UTTR), and requirements such as land use management plans, regional haze rules, or PSD review of major new sources do not apply.

Comment response code	Commenter ID	Comment summary	Response
AQ-3	F-3	Commenter states the emissions presented in the Draft EIS are less than the levels permitted by state air quality programs and recommends clarifying the discrepancy by explaining whether the emissions presented are actual emissions estimates reported to the state and disclosing how the estimates were generated, including which emission sources at the bases contribute to the stationary source totals. Commenter recommends including the installation state permits in an appendix to the EIS. Commenter states it is important that the EIS notes that stationary source emissions do not include emissions occurring from mobile sources such as aircraft and trucks.	Additional language was added to the Final Sentinel EIS explaining that the emissions presented are actual emissions estimates reported to the state and disclosing how the estimates were generated. Also, language was added to the EIS noting the stationary source emissions do not include emissions occurring from many activities on the base that are mobile sources, such as aircraft and trucks. As the air permits for the individual installations were not material substantiating any analysis fundamental to the EIS and would tend to be encyclopedic in nature, they were referenced in the Final EIS instead of being added in full to the appendices. The following note was added to the tables referenced in the comment: Presented are actual emissions based on annual reporting requirements that do not include emissions from mobile sources such as aircraft and trucks.
AQ-4	F-3	Commenter states the air quality impact analysis in the Draft EIS relies on the Air Force's Air Conformity Applicability Model (ACAM) emissions calculations. Commenter states the Draft EIS indicates that up to 20 pieces of equipment would be needed to upgrade launch facilities (LFs) but that Appendix D included 12 pieces of equipment and it is unclear why the equipment counts do not match. Commenter recommends the Final EIS disclose and discuss the basis for emission factors used by ACAM and present emissions from each activity individually in addition to presenting emission totals for each base. Commenter recommends that all assumptions for the alternatives (e.g., equipment count and operating hours) match those used for emission estimates.	Emissions calculations were reviewed and updated for the Final Sentinel EIS. Because of the limited construction area, Section 2.1.6.3 was updated to reflect that approximately 10 pieces of equipment would be operated at any given time to upgrade a MAF and approximately five pieces of equipment would be operated at any given time to upgrade an LF. A thorough review of the Air Conformity Applicability Model (ACAM) model inputs and bottom-up emission assessment was conducted based on the comment, and detailed emission calculations for individual elements (e.g., one MAF, one LF, and one communication tower) were included in Appendix D. This approach was more consistent with the emission estimations provided in the comment. The exact types of equipment, construction phasing, and hours of use are unknown at this time. Therefore, the Air Force uses conservative assumptions for the types of equipment and hours of use as a reasonable upper bound for construction emissions resulting from the Proposed Action.

Comment response code	Commenter ID	Comment summary	Response
AQ-5	F-3	Commenter states that the Draft EIS compares project emissions to major source Prevention of Significant Deterioration (PSD) permitting thresholds and General Conformity *de minimis* thresholds and states that using the thresholds is not appropriate because they were not developed for these purposes. Commenter recommends presenting emissions for individual activities before presenting emission totals and that the Final EIS include documentation of emissions calculations and projected duration of the emissions. Commenter recommends the Final EIS provide conclusions regarding potential air quality impacts, including acknowledgement that there may be elevated pollutants near construction sites.	Because of the spatial extent of the action, the Final Sentinel EIS presents emissions for individual activities (e.g., one MAF conversion, one LF conversion, and construction of one communication tower) prior to presenting emission totals. Detailed emissions calculations and the projected duration of those emissions are provided in Appendix D of the Final EIS. The Final EIS (Section 3.1.1.2.2) was updated to read: There would be minute increases in pollutant concentrations, particularly particulate matter in the form of dust, on and adjacent to the construction sites. Notably, there are restrictive easements that exclude the construction of residences within approximately one-quarter mile surrounding the off-base elements of the Proposed Action (e.g., MAFs and LFs), limiting exposure to individuals. Activities and associated air emissions along the proposed utility corridors would not be fixed at any specific location but would move along the ROWs as the project progressed. In addition, the restrictive easements and the general nature of the undeveloped area and wind conditions surrounding the construction sites would allow for air emissions to dissipate rapidly. There may be elevated pollutant concentrations near construction sites. These effects would be negligible and end with the construction phase.
AQ-6	F-3	Commenter recommends that construction within one-quarter mile from residences be limited to the use of Tier 4 (2015 or newer) construction equipment to reduce emissions and the possibility of unhealthy air quality for residents.	There are restrictive easements that exclude the construction of residences within approximately one-quarter mile surrounding the off-base elements of the Proposed Action (e.g., MAFs and LFs). In addition, activities and associated air emissions along the proposed utility corridors would not be fixed at any single location but would move along the rights-of way (ROWs) as the Project progresses. Therefore, the requirements outlined in the comment were not included in the mitigation measures recommended to the decision maker in the Final Sentinel EIS.

Comment response code	Commenter ID	Comment summary	Response
AQ-7	F-3	Commenter states that an applicability analysis is required for each affected nonattainment area and only for those emissions that will originate within the nonattainment area. Commenter states that the analysis does not break out emissions by those that will originate in nonattainment areas for missile wing activity in Colorado and does not discretely address two of the four areas that must be considered. Commenter makes numerous recommendations to improve the analysis. Commenter recommends evaluating each area individually. Commenter states applicability analysis should not include operational emissions from stationary sources that require a permit under the New Source Review or PSD air permitting programs. Commenter recommends documenting the applicability analysis for each area using the appropriate *de minimis* thresholds for each area's classification. Commenter recommends that, should a conformity determination be required, the demonstration and determination for each nonattainment area be done separately.	An applicability analysis was developed for each affected nonattainment area, which included only emissions that would originate within the nonattainment area. The Final Sentinel EIS breaks out emissions according to those that would originate in nonattainment areas for missile wing activity in Colorado and discretely addresses both areas. The assessment assumes that all the MAFs, LFs, and communication towers within a Colorado nonattainment area would be constructed in a single year. The Air Force: • Verified that emission calculations using ACAM are representative, including a bottom-up conservative assessment, as requested; • Included detailed emission calculations in Appendix D of the Final EIS; • Presented in the Final EIS a general explanation of activity and equipment that would be used for the action, as the exact types of equipment and construction schedule are unknown at this time; • Presented emissions that would originate within each of the four nonattainment areas during the maximum year, as emissions during that year would be below the *de minimis* thresholds; • Presented this evaluation for each area individually, including Colorado's two ozone nonattainment areas; • Excluded operational activities in the missile fields, as future activities would be similar in scope and operation to activities currently being conducted (40 CFR § 93.153(c)(2)(x)); and • Documented the applicability analysis of each area using the appropriate *de minimis* thresholds for each area's classification, including Colorado—marginal and serious ozone nonattainment areas (differing boundaries) (40 CFR § 81.306)—and Utah—a serious nonattainment area for particulate matter less than 2.5 microns in diameter and a marginal ozone nonattainment area (40 CFR § 81.345). The emissions from nonattainment pollutants during the peak year would be below the *de minimis* thresholds for all four nonattainment areas and a formal conformity determination is not required.

Comment response code	Commenter ID	Comment summary	Response
AQ-8	F-5	Commenter states that Executive Order 13990 emphasizes the importance of ensuring federal agencies "capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account." Commenter states that an accurate social cost disclosure in National Environmental Policy Act (NEPA) documents helps agencies determine the social benefits of reducing greenhouse gas emission between alternatives.	During the preparation of the Draft Sentinel (GBSD) EIS, the use of the social cost of carbon was barred through a district court injunction. Since that time, the injunction has been lifted. Estimates for the social cost of carbon have been included in the Final Sentinel EIS.

BIOLOGICAL RESOURCES

Comment Response Code	Commenter ID	Comment summary	Response
BI-1	F-5	Commenter states that the Final EIS should update new wolverine occurrences.	Language addressing the wolverine has been added to Section 3.0, Biological Resources, in the Final Sentinel EIS based on the comment. Records of new Montana Natural Heritage Program (MTNHP) wolverine occurrences were received and included in Figure 3.3.32 and updated in the text.
BI-2	F-5	Commenter states that the Final EIS should update new grizzly bear occurrences.	The most recent documented occurrence information from the MTNHP (May 2022) has been incorporated into the Final Sentinel EIS; however, this updated data request resulted in no additional grizzly bear occurrences in the vicinity of the Project.
BI-3	F-6	Commenter recommends that the following mitigation measure be added to the BLM supplement in Appendix A: The Air Force is responsible for the proposed action submission to the Montana Sage-Grouse Habitat Conservation Program (MSGHCP) for disturbance calculations. BLM approval is contingent upon acceptable design criteria and mitigation through MSGHCP in coordination with BLM.	A "wildlife" bullet has been added below "water resources" in Section A.1.6 of Appendix A, which includes the information suggested in this comment. The same information also was added as a mitigation measure in Section 6.0 of the Final Sentinel EIS to be recommended to the decision maker: BLM – 13: The Air Force is responsible for providing GIS data for the Project's layout/design to the Montana Sage-Grouse Habitat Conservation Program (MSGHCP) so the MSGHCP can develop final disturbance calculations for sage-grouse. BLM approval is contingent upon acceptable design criteria and mitigation through MSGHCP in coordination with BLM.
BI-4	F-6	Commenter recommends that the following mitigation measure be added to the BLM supplement in Appendix A: Design Criteria for installing new and replacing existing lines within PHMA.	A "wildlife" bullet has been added below "water resources" in Section A.1.6 of Appendix A, which includes the information suggested in this comment. The same information also was added as a mitigation measure in Section 6.0 of the EIS to be recommended to the decision maker: BLM – 14: Design criteria for installing new and replacing existing lines within Priority Habitat Management Areas (PHMA).

Comment Response Code	Commenter ID	Comment summary	Response
BI-5	F-6	Commenter recommends that the following mitigation measure be added to the BLM supplement in Appendix A: Timing restriction: No activities between March 15 and July 15 for replacement lines.	A "wildlife" bullet has been added below "water resources" in Section A.1.6 of Appendix A, which includes the information suggested in this comment as well as details and information provided in a follow-up conversation with the Bureau of Land Management (BLM) regarding this comment. The same information also was added as a mitigation measure in Section 6.0 of the Final Sentinel EIS to be recommended to the decision maker: BLM – 19: In Priority Habitat Management Areas (PHMA), unless within established roadways along county roads and highways, no construction activities would be allowed between March 15 and July 15 for new and modified lines to protect breeding, nesting, and early brood rearing habitat for Greater Sage-Grouse.
BI-6	F-6	Commenter recommends that the following mitigation measure be added to the BLM supplement in Appendix A: Avoid new surface disturbance in PHMA where possible.	A "wildlife" bullet has been added below "water resources" in Section A.1.6 of Appendix A, which includes the information suggested in this comment. The same information also was added as a mitigation measure in Section 6.0 of the EIS to be recommended to the decision maker: BLM – 15: Avoid new surface disturbance in Priority Habitat Management Areas (PHMA) where feasible.
BI-7	F-6	Commenter recommends that the following mitigation measure be added to the BLM supplement in Appendix A: Co-locate replacements for existing lines with existing road disturbance where possible.	A "wildlife" bullet has been added below "water resources" in Section A.1.6 of Appendix A, which includes the information suggested in this comment as well as details and information provided in a follow-up conversation with the BLM regarding this comment. The same information also was added as a mitigation measure in Section 6.0 of the EIS to be recommended to the decision maker: BLM – 12: In Greater Sage-Grouse habitat, ROWs will be collocated within existing disturbance or ROWs along roadways where possible. If this is not possible, the use of construction techniques, such as "knifing and ploughing", will be utilized to prevent disturbance to sagebrush and native vegetation. If impacts to sage-grouse or their habitat cannot be avoided through siting along existing major roadways, or using minimization construction techniques, then compensatory mitigation will be required in the vicinity of affected habitats. Potential compensatory mitigation that would be considered include, but are not limited to, mesic/riparian habitat improvements along Ford's Creek and Box Elder Creek.

Comment Response Code	Commenter ID	Comment summary	Response
BI-8	F-6	Commenter recommends that the following mitigation measure be added to the BLM supplement in Appendix A: Co-locate existing lines to the new proposed lines adjacent to roads to minimize disturbance in habitat.	A "wildlife" bullet has been added below "water resources" in Section A.1.6 of Appendix A, which includes the information suggested in this comment as well as details and information provided in a follow-up conversation with the BLM regarding this comment. The same information also was added as a mitigation measure in Section 6.0 of the EIS to be recommended to the decision maker: BLM – 12: In Greater Sage-Grouse habitat, ROWs will be collocated within existing disturbance or ROWs along roadways where possible. If this is not possible, the use of construction techniques, such as "knifing and ploughing", will be utilized to prevent disturbance to sagebrush and native vegetation. If impacts to sage-grouse or their habitat cannot be avoided through siting along existing major roadways, or using minimization construction techniques, then compensatory mitigation will be required in the vicinity of affected habitats. Potential compensatory mitigation that would be considered include, but are not limited to, mesic/riparian habitat improvements along Ford's Creek and Box Elder Creek.
BI-9	F-6	Commenter recommends that the following mitigation measure be added to the BLM supplement in Appendix A: No vegetation clearing will occur around existing or replacement lines.	A "wildlife" bullet has been added below "water resources" in Section A.1.6 of Appendix A, which includes the information suggested in this comment as well as details and information provided in a follow-up conversation with the BLM regarding this comment. The same information also was added as a mitigation measure in Section 6.0 of the EIS to be recommended to the decision maker: BLM – 18: No permanent vegetation clearing occurs around existing or replacement lines, and areas would be allowed to restore to preconstruction conditions following completion of reclamation.
BI-10	F-6	Commenter recommends that the following mitigation measure be added to the BLM supplement in Appendix A: Rip in replacement lines to minimize disturbance (comment includes a link to a YouTube video example).	A "wildlife" bullet has been added below "water resources" in Section A.1.6 of Appendix A, which includes the information suggested in this comment as well as details and information provided in a follow-up conversation with the BLM regarding this comment. The same information also was added as a mitigation measure in Section 6.0 of the EIS to be recommended to the decision maker: BLM – 12: In Greater Sage-Grouse habitat, ROWs will be collocated within existing disturbance or ROWs along roadways where possible. If this is not possible, the use of construction techniques, such as "knifing and ploughing", will be utilized to prevent disturbance to sagebrush and native vegetation. If impacts to sage-grouse or their habitat cannot be avoided through siting along existing major roadways, or using minimization construction techniques, then compensatory mitigation will be required in the vicinity of affected habitats. Potential compensatory mitigation that would be considered include, but are not limited to, mesic/riparian habitat improvements along Ford's Creek and Box Elder Creek.

Comment Response Code	Commenter ID	Comment summary	Response
BI-11	F-6	Commenter recommends that a mitigation measure be added to the BLM supplement in Appendix A that requires the utilization of construction techniques that minimize disturbance (comment includes a link to a YouTube video example).	A “wildlife” bullet has been added below “water resources” in Section A.1.6 of Appendix A, which includes the information suggested in this comment as well as details and information provided in a follow-up conversation with the BLM regarding this comment. The same information also was added as a mitigation measure in Section 6.0 of the EIS to be recommended to the decision maker: BLM – 12: In Greater Sage-Grouse habitat, ROWs will be collocated within existing disturbance or ROWs along roadways where possible. If this is not possible, the use of construction techniques, such as "knifing and ploughing", will be utilized to prevent disturbance to sagebrush and native vegetation. If impacts to sage-grouse or their habitat cannot be avoided through siting along existing major roadways, or using minimization construction techniques, then compensatory mitigation will be required in the vicinity of affected habitats. Potential compensatory mitigation that would be considered include, but are not limited to, mesic/riparian habitat improvements along Ford’s Creek and Box Elder Creek.
BI-12	F-6	Commenter recommends that the following mitigation measure be added to the BLM supplement in Appendix A: New lines will be placed in existing disturbance between fences along roads.	A “wildlife” bullet has been added below “water resources” in Section A.1.6 of Appendix A, which includes the information suggested in this comment as well as details and information provided in a follow-up conversation with the BLM regarding this comment. The same information also was added as a mitigation measure in Section 6.0 of the EIS to be recommended to the decision maker: BLM – 12: In Greater Sage-Grouse habitat, ROWs will be collocated within existing disturbance or ROWs along roadways where possible. If this is not possible, the use of construction techniques, such as "knifing and ploughing", will be utilized to prevent disturbance to sagebrush and native vegetation. If impacts to sage-grouse or their habitat cannot be avoided through siting along existing major roadways, or using minimization construction techniques, then compensatory mitigation will be required in the vicinity of affected habitats. Potential compensatory mitigation that would be considered include, but are not limited to, mesic/riparian habitat improvements along Ford’s Creek and Box Elder Creek.
BI-13	F-6	Commenter recommends that the following mitigation measure be added to the BLM supplement in Appendix A: No new roads will be created as a result of the proposed action.	A “wildlife” bullet has been added below “water resources” in Section A.1.6 of Appendix A, which includes the information suggested in this comment as well as details and information provided in a follow-up conversation with the BLM regarding this comment. The same information also was added as a mitigation measure in Section 6.0 of the EIS to be recommended to the decision maker: BLM – 17: Other than temporary access roads to newly acquired sites and temporary construction areas, no new permanent roads will be created as a result of the Project on BLM-administered lands.

Comment Response Code	Commenter ID	Comment summary	Response
BI-14	F-6	Commenter recommends that the following mitigation measure be added to the BLM supplement in Appendix A: Noxious weeds will be monitored and managed along new and existing lines.	Upon further discussion with the BLM, it was determined that this measure is captured in existing mitigation measures.
BI-15	F-6	Commenter recommends that the following mitigation measure be added to the BLM supplement in Appendix A: Fire suppression equipment will be accessible during installation and maintenance activities.	A “wildlife” bullet has been added below “water resources” in Section A.1.6 of Appendix A, including the information suggested in this comment. The same information also was added as a mitigation measure in Section 6.0 of the EIS to be recommended to the decision maker: BLM – 16: Fire suppression equipment will be accessible during construction and maintenance activities.
BI-16	F-6	Commenter recommends that the following mitigation measure be added to the BLM supplement in Appendix A: Compensatory mitigation should occur in the vicinity of impacted leks. Potential compensatory areas include mesic/riparian habitat improvements along Ford's Creek and Box Elder Creek.	A “wildlife” bullet has been added below “water resources” in Section A.1.6 of Appendix A, which includes the information suggested in this comment as well as details and information provided in a follow-up conversation with the BLM regarding this comment. The same information also was added as a mitigation measure in Section 6.0 of the EIS to be recommended to the decision maker: BLM – 12: In Greater Sage-Grouse habitat, ROWs will be collocated within existing disturbance or ROWs along roadways where possible. If this is not possible, the use of construction techniques, such as "knifing and ploughing", will be utilized to prevent disturbance to sagebrush and native vegetation. If impacts to sage-grouse or their habitat cannot be avoided through siting along existing major roadways, or using minimization construction techniques, then compensatory mitigation will be required in the vicinity of affected habitats. Potential compensatory mitigation that would be considered include, but are not limited to, mesic/riparian habitat improvements along Ford’s Creek and Box Elder Creek.
BI-17	F-6	Commenter recommends that the mitigation measures suggested to protect wildlife be incorporated into project implementation.	All measures added as bullets to Section A.1.6 of Appendix A to address BLM comments above also have been added as mitigation measures in Section 6.0 of the Final Sentinel EIS to be recommended to the decision maker, as noted in the response to each comment.

Comment Response Code	Commenter ID	Comment summary	Response
BI-18	I-10	Commenter states that most of their acres have never been plowed and are virgin prairie and that many similar parcels exist east and west of their property. Commenter states that trenching a cable route through the land will disrupt the soil and root systems leading to soil erosion during rain and spring runoff events.	Site selection guidelines for the installation of the utility corridors are outlined in Section 2.1.6.3 of the Final Sentinel EIS, which include the following: • Utility corridors would be located within or along existing utility easements and corridors wherever possible. • Utility corridors located along existing roadways would be sited in accordance with state and county DOT requirements and sound engineering practice. • Utility corridors located along existing roadways would be sited as close to the roads as possible without undermining their structural integrity. • Utility corridors not able to be located along existing roadways would be sited along the most practicable path to minimize effects on public and private property and sensitive resources in the area. • If sensitive resources are identified near potential sites, the Air Force would consider actions to avoid or minimize adverse effects to the maximum extent practicable. Additionally, Section 6.0 of the EIS includes the following mitigation measure related to the siting of utility corridors: BIO-7: Minimize adverse effects on sensitive biological resources to the maximum extent feasible when siting easements for temporary storage of construction materials and equipment at missile alert facilities (MAFs), launch facilities (LFs), utility corridors, communication towers, workforce hubs, and laydown areas. They would be sited in previously disturbed areas wherever possible. At this time, it is expected that the utility corridors would be installed adjacent to the roadway in the area identified in the comment. Consistent with the comment, and as outlined in the EIS, ground disturbance is expected in the temporary construction easement during the installation. Upon completion of the corridors, disturbed areas would be reseeded and topographically restored, as appropriate. It is not anticipated the Proposed Action would change (i.e., neither increase nor decrease) the surface water or stormwater flow rates or collection in the area identified.
BI-19	I-10	Commenter states that soil and environmental damage, including the spread of invasive and noxious weeds, cannot be avoided because of the size and weight of the trenching equipment and extent of disturbed soil areas.	The affected environment and environmental consequences associated with biological resources, including noxious weeds, are addressed in Section 3.3 of the EIS. Ground disturbance and removal of vegetation would increase the potential for the introduction and spread of noxious weeds and invasive species. With the mitigation outlined in the EIS, the Proposed Action would not substantially increase the spread of noxious weeds or invasive species. All states in which Sentinel project activities would be conducted have regulations related to noxious weeds. In general, each state and/or county maintains a list of plant species designated as noxious in the state and/or county and

Comment Response Code	Commenter ID	Comment summary	Response
			requires their management and control. The Air Force and its contractors will coordinate with local authorities to comply with all such local/state regulations on the management of noxious weeds. In addition, the following specific mitigation measures are included in Section 6.0 of the Final EIS to be recommended to the decision maker: 1. GEN – 9: Segregate and store separately from the subsoil layer all topsoil that is required to be temporarily removed during construction (e.g., soil removed from the utility trench line). 2. GEN – 10: Replace all topsoil and subsurface soils that were temporarily removed and stored during the construction process in the proper order during reclamation (i.e., subsoil in the bottom of the trench/disturbance-area and topsoil on top). 3. GEN – 13: Decompact soils that have become compacted during construction on a case-by-case basis using techniques and methods developed through negotiation with the landowner or land management agency. 4. SOIL – 1: Submit a Compaction Monitoring Plan for review and land management agency approval prior to construction on federally managed lands that specifies the conditions under which construction would either not start or would be shut down due to excessively wet soils. Conditions would be defined so that they are measurable in the field and easy to demonstrate to construction workers. 5. GEN – 21: Clean all earthwork equipment before arriving at the site to begin construction, operations, or maintenance activities. Clean the equipment's tracks, skid plates, and other parts that can trap soil and debris from its previous off-site location. 6. BIO – 13: Conduct preconstruction noxious weed surveys of areas to be directly affected by the project, excluding under active agricultural cultivation and military installations. The purpose of these surveys is to document the presence and abundance of existing noxious weeds prior to disturbance and establish the success criteria that will be used to determine when post-construction noxious weed management activities have returned an area to preconstruction conditions in regards to noxious weed cover. 7. BIO – 14: Conduct preconstruction weed treatment in project areas identified as containing a high density of noxious weeds, as outlined in the weed management plan. Conduct these treatments prior to the start of ground-disturbing activities and at the time most appropriate for the target species in areas identified. Limit preconstruction weed treatment to the areas that are expected to have surface-disturbing activities. Preconstruction treatment may use mechanical control, hand spraying, grazing, or herbicides methods. 8. BIO – 15: If herbicides are required for weed control, comply with label restrictions; federal, state and/or county regulations; as well as landowner agreements related to herbicide use/applications. No spraying would occur prior to notification of the applicable

Comment Response Code	Commenter ID	Comment summary	Response
			land management agency or landowner. On federal or state-controlled lands, an herbicide use plan would be submitted prior to any herbicide application as recommended in the BLM herbicide EIS (https://www.blm.gov/programs/natural-resources/ weeds-and-invasives/vegetative-peis). The herbicide use plan would include the dates and locations of application, target species, herbicide, adjuvants, and application rates and methods (e.g., spot spray vs. boom spray). 9. BIO – 16: If herbicides are required for weed control, select appropriate herbicides or other chemical weed controls from the federal, state or county's list of previously approved herbicides and in accordance with any herbicide plans. If an applicable land managing agency determines that a previously approved herbicide and/or plan is unacceptable, they would notify the Air Force. 10. BIO – 18: Do not place soil stockpiles from areas that did not have noxious weeds or invasive species present adjacent to populations of noxious weeds or invasive species. Soil stockpiles in areas containing noxious weeds and invasive plant species would be kept separate from soil removed from areas that are free of noxious weed and invasive plant species, and the soil would be replaced in or near the original excavation. If requested by the applicable land-management agency, soil stockpiles would be covered with plastic if the soil stockpile would be in place for two weeks or more and is not being actively used. 11. BIO – 21: Rehabilitate temporarily disturbed areas as soon as feasible, following ground-disturbing activities, to preconstruction conditions. Seed mixes for revegetation would be developed and agreed to through coordination with the local office of each appropriate local land management agency (e.g., USFS and BLM), state land management agency, or landowner as applicable. Seed mixes would be certified "noxious weed free". Planted species used in the revegetation efforts should match the native species composition present in and around the site to the extent possible. At rangeland/grassland sites, seed mixes should include at least three to four grass species, targeted to the specific site. In riparian areas, the planting of willows and/or cottonwoods (if site appropriate) may be used to replace woody cover; deciduous shrubs such as currant, chokecherry, native plum, wild rose, and buffaloberry may also be considered. 12. BIO – 22: Work with land managers as well as state and local county weed departments to develop and implement a plan to assess, treat, and monitor for weeds. Conduct annual post-construction monitoring and treatment of invasive plants on closed roads (access roads dedicated for use by the Project only), temporary roads, laydown yards, and other disturbed areas for 3 years in areas where infestations or populations of noxious weeds have been identified. If after 3 years post-construction conditions are not equivalent to or better than preconstruction conditions (in accordance with applicable permit), monitoring and treatment would continue until these conditions are met. However, if adjacent unaffected land uses (i.e., uses not related to the Project) are significantly

Comment Response Code	Commenter ID	Comment summary	Response
			contributing to the introduction and/or persistence of invasive plant species within areas initially disturbed by the Project, then the Air Force would not be required to treat noxious weeds in these areas.
BI-20	I-10	Commenter states that their property has native tall grasses and most animals native to North Dakota.	The comment is consistent with the affected environment described in Section 3.3, Biological Resources, of the Final Sentinel EIS. Biological surveys would be conducted before construction to identify any special status species, and numerous mitigation measures associated with biological resources are outlined in Section 6.0 of the Final EIS that would minimize impacts on native species.
BI-21	I-14	Commenter states that more mitigation is needed for dirt work off roads. Commenter recommends that any vehicle leaving an established road be washed down.	The affected environment and environmental consequences associated with biological resources, including noxious weeds, are addressed in Section 3.3 of the Final Sentinel EIS. Ground disturbance and removal of vegetation would increase the potential for the introduction and spread of noxious weeds and invasive species. With the mitigation outlined in the EIS, the Proposed Action would not substantially increase the spread of noxious weeds or invasive species. All states in which Sentinel project activities would be conducted have regulations related to noxious weeds. In general, each state and/or county maintains a list of plant species designated as noxious in the state and/or county and requires their management and control. The Air Force and its contractors will coordinate with local authorities to comply with all such local/state regulations on the management of noxious weeds. In addition, the specific mitigation measures are included in Section 6.0 of the Final EIS and outlined in response to comment BI-19 to be recommended to the decision maker, including a measure to address this comment (measure GEN – 21) and other measures related to weed control that have been added since the Draft Sentinel (GBSD) EIS.
BI-22	I-14	Commenter states that the EIS does not accurately depict grizzly bear range.	It is understood that there has been an increase in confirmed grizzly bear sightings in the Big Snowy Mountains; in Chouteau, Judith Basin, and Meagher counties; and in the area surrounding Lewistown. The most recent documented occurrence information from the MTNHP (May 2022) has been incorporated into the Final Sentinel EIS.

Comment Response Code	Commenter ID	Comment summary	Response
BI-23	I-15	Commenter states that they want assurance that the Air Force and its contractors will do everything possible to prevent the spread of noxious weeds.	The affected environment and environmental consequences associated with biological resources, including noxious weeds, are addressed in Section 3.3 of the Final Sentinel EIS. Ground disturbance and removal of vegetation would increase the potential for the introduction and spread of noxious weeds and invasive species. With the mitigation outlined in the EIS, the Proposed Action would not substantially increase the spread of noxious weeds or invasive species. All states in which Sentinel project activities would be conducted have regulations related to noxious weeds. In general, each state and/or county maintains a list of plant species designated as noxious in that state and/or county and requires their management and control. The Air Force and its contractors would coordinate with local authorities to comply with local/state regulations on the management of noxious weeds. In addition, specific mitigation measures are included in Section 6.0 of the Final EIS to be recommended to the decision maker, including measures related to weed control (as outlined in response to comment I-10-6) that have been added since the Draft Sentinel (GBSD) EIS.
BI-24	I-22	Commenter states that Camp Guernsey incorporates a leased livestock grazing program that benefits local livestock producers and Camp Guernsey as a vegetation management tool to reduce wildfire risk. Commenter states that the EIS is unclear on whether livestock grazing pastures or permittees would be impacted.	The effects of the Proposed Action on land use are discussed in Section 3.9.1.2.1 of the Final Sentinel EIS. Construction of the two proposed facilities at Camp Guernsey would have no adverse effects on land use. The proposed locations are within areas currently designated as mission and outside areas with land use controls (LUCs). Construction in those locations would not change, interfere with, or conflict with existing or planned land uses; be incompatible with adjacent off-base land use; divide an established community; or be inconsistent with adopted LUC plans. Specifically, there would be no changes to the livestock grazing program or associated vegetation management at Camp Guernsey.
BI-25	I-22	Commenter states that Table 3.3-4 in the EIS does not include Wyoming for wildlife, plants, or insects. Commenter recommends the table include Wyoming and the Colorado butterfly plant.	Unlike Nebraska and Colorado, the State of Wyoming has no state-designated threatened or endangered species policy (see the table note for Table 3.3-4 in the Final Sentinel EIS). The state's species statuses are included in Table 3.3-4, whereas Wyoming uses the federally listed threatened and endangered species and their federal status. The Colorado butterfly plant is identified in Table 3.3-4 as a flowering plant, has "Delisted" as its federal status, and is one of the species known to or with the potential to occur at F.E. Warren AFB, in the missile field, or at Camp Guernsey.

Comment Response Code	Commenter ID	Comment summary	Response
BI-26	I-22	Commenter recommends that a description of the Platte River Recovery Implementation Program be added.	The following language has been added to Section 3.15.1.1.1 of the Final Sentinel EIS: The Platte River Recovery Implementation Program (PRRIP) provides ESA compliance for water-related activities throughout the Platte River Basin by managing stream flows and by restoring and protecting habitat lands for target species. This program is led by a Governance Committee that includes representatives of Colorado, Wyoming, Nebraska, the BOR, and USFWS (PRRIP 2022). Additionally, the following mitigation measure has been added to Chapter 6.0 of the EIS to be recommended to the decision maker: WATER – 16: Comply with provisions of the Platte River Recovery Implementation Program (PRRIP) for activities in the F.E. Warren missile field to avoid and minimize adverse effects on stream flows and habitat for target species.
BI-27	N-2	Commenter states a concern about the potential to spread noxious weeds.	The affected environment and environmental consequences associated with biological resources, including noxious weeds, are addressed in Section 3.3 of the Final Sentinel EIS. Ground disturbance and removal of vegetation would increase the potential for the introduction and spread of noxious weeds and invasive species. With the mitigation measures outlined in the EIS, the Proposed Action would not substantially increase the spread of noxious weeds or invasive species. All states in which Sentinel project activities would be conducted have regulations related to noxious weeds. In general, each state and/or county maintains a list of plant species designated as noxious in the state and/or county and requires their management and control. The Air Force and its contractors will coordinate with local authorities to comply with local/state regulations on the management of noxious weeds. In addition, specific mitigation measures are included in Section 6.0 of the Final EIS to be recommended to the decision maker, including measures related to weed control (as outlined in response to comment I-10-6) that have been added since the Draft EIS.
BI-29	N-5	Commenter states grizzly bear sightings have been increasing in the Big Snowy Mountains and the area surrounding Lewistown and that service personnel working the area should be aware of that.	Text has been added to Section 3.3.2.1.4 of the Final Sentinel EIS indicating that Grizzly bear occurrences (MTNHP 2022) and observations outside the NCDE in Chouteau, Judith Basin, and Meagher counties (Figure 3.3-30) are likely the result of exploratory movement or individuals traveling between ecosystems (USFWS 2021d). It is understood that there has been an increase in confirmed grizzly bear sightings in the Big Snowy Mountains and the area surrounding Lewistown. This additional information has been passed on to the prime contractor for awareness.

Comment Response Code	Commenter ID	Comment summary	Response
BI-30	N-12, N-16, N-5	Commenter expresses support for the project and suggests the Air Force coordinate with Montana to prevent further spread of noxious weeds in the areas outside Malmstrom AFB. Commenter suggests best management practices (BMPs) and mitigation measures.	The affected environment and environmental consequences associated with biological resources, including noxious weeds, are addressed in Section 3.3 of the Final Sentinel EIS. Ground disturbance and removal of vegetation would increase the potential for the introduction and spread of noxious weeds and invasive species. With the mitigation measures outlined in the EIS, the Proposed Action would not substantially increase the spread of noxious weeds or invasive species. All states in which Sentinel project activities would be conducted have regulations related to noxious weeds. In general, each state and/or county maintains a list of plant species designated as noxious in the state and/or county and requires their management and control. The Air Force and its contractors will coordinate with local authorities (such as the Montana Department of Agriculture and county weed departments) to comply with local/state regulations on the management of noxious weeds. In addition, specific mitigation measures are included in Section 6.0 of the Final EIS to be recommended to the decision maker, including measures to address the washing of vehicles (measure GEN – 21), working with state and county weed departments (measure BIO – 22), and other measures related to weed control (as outlined in response to comment I-10-6) that have been added since the Draft EIS. Mitigation measure BIO – 11 has been revised to remove the reference to federally managed lands, so it will apply to all lands. The concern about not compromising the integrity of Certified Organic agriculture producers has been passed along to the prime contractor for consideration as they develop the weed management plan.
BI-33	S-9	Commenter states a concern about the impact the project may have on the U.S. Geological Survey (USGS) gage in Lodgepole Creek at Bushnell and the stream. Commenter provides gage and station location information and USGS contact information.	The following mitigation measure has been added to those listed in Section 6.0 of the Final Sentinel EIS to be recommended to the decision maker: BIO – 51: The applicable State's Department of Natural Resources (DNR) will be contacted no later than 1 month prior to the commencement of construction to discuss the potential for the Project to affect current stream gages located in affected area, and to develop (as needed) measures that could be taken to avoid or minimize impacts to these current stream gages.
BI-34	S-10	Commenter provides information on the vegetative characteristics of F.E. Warren AFB, Camp Guernsey, and utility corridor areas.	The comment is consistent with Section 3.3, Biological Resources, outlined in the Final Sentinel EIS.

Comment Response Code	Commenter ID	Comment summary	Response
BI-35	S-10	Commenter urges the Air Force to protect crucial aquatic habitat areas at Lodgepole and Crow creeks. Commenter states Lodgepole Creek in southeastern Wyoming is designated an Aquatic Conservation Area in Wyoming's 2017 State Wildlife Action Plan. Commenter recommends various measures to protect the habitats.	The following mitigation measure has been added to those listed in Section 6.0 of the EIS to be recommended to the decision maker: BIO – 40: For Project activities conducted in and near Lodgepole Crow Creeks, and their tributaries in Wyoming: • Cross these waterbodies using directional drill methods where feasible. • Prevent any barriers to fish passage resulting from the crossing. • If road crossings are required, bridges would be utilized with bottomless arches, rather than building roads through the creek and installing culverts. • Avoid construction activities within associated ephemeral wetlands, including playas, dune ponds, and shallow oxbows. If construction activities are necessary, they would be conducted when the associated wetland/waterbody is dry when feasible. • Implement associated measures and practices (listed in other required mitigation measures listed for this Project) to minimize disturbances of aquatic systems from construction activities, including impacts from sedimentation and dewatering.
BI-36	S-10	Commenter states that Table 3.3-4 in the EIS does not list Wyoming special status species. Commenter states that Wyoming's special status species are called Species of Greatest Conservation Need (SGCN) rather than State Endangered or State Threatened. Commenter recommends including SGCN Tier I and Tier II species that have the potential to occur at F.E. Warren AFB, missile field, or Camp Guernsey in Table 3.3-4.	Species of greatest conservation need (SGCN) are defined by each state as part of its state wildlife action plan (SWAP). Although one guiding principle of a SWAP is to direct conservation attention to SGCNs before they become imperiled and recovery becomes more difficult and costly, the term “SGCN” is not a statutory designation and, therefore, differs from designations such as “endangered” or “threatened,” which are codified by the federal Endangered Species Act and similar state-level statutes (i.e., inclusion as an SGCN does not grant the species any regulatory protections, unlike those granted to an endangered or threatened species). As a result, it is inappropriate to lump federal or state-listed endangered or threatened species with SGCNs and to treat them equally under regulations and laws. SGCNs project-wide (including those designated in Wyoming) are addressed in the Final Sentinel EIS to the level that is appropriate for their federal and state regulatory designations (see Section 3.3 of the EIS).

Comment Response Code	Commenter ID	Comment summary	Response
BI-37	S-10	Commenter states that Wyoming Species of Greatest Conservation Need (SGCN) should be included in mitigation measures for biological resources. Commenter recommends numerous edits and additions to the mitigation measures listed in the EIS.	Mitigation measures outlined in the comment have been revised or added to the list of those in Section 6.0 of the Final Sentinel EIS to be recommended to the decision maker. The following measures were revised as indicated: 1. BIO – 61 (BIO – 58 in the Draft EIS): The following sentence has been added to the end of this mitigation measure: Note that the U.S. Fish and Wildlife Service has jurisdiction over nesting raptors regardless of nest location or surface ownership. 2. BIO – 94 (BIO – 85 in the Draft EIS) has been revised to remove the phrase: …as required by the Nebraska Game and Parks Commission (NGPC). The following new mitigation measures have been added: 1. BIO – 69: Black-Tailed Prairie Dog Colonies: Avoid siting Project features, including roads and utility corridors, in active prairie dog colonies. 2. BIO – 71: Burrowing Owl, Mountain Plover, Upland Sandpiper, and Long-Billed Curlew: If pre-construction surveys document presence of individuals or occupied nests for these species, avoid surface disturbance within or adjacent to the occupied habitat between April 1 and July 31, or until nestlings fledge or the nest is no longer occupied. 3. BIO – 88: Plains Hog-Nosed Snake and Greater Short-Horned Lizard: Avoid or minimize disturbance to open sandy areas and sandy blow-outs within grasslands and mixed-grass shrublands whenever feasible. 4. BIO – 89: Plains Sharp-Tailed Grouse: No above ground permanent surface occupancy authorized within 0.25 mile of the boundary of an occupied lek, and avoid ground-disturbing activity within 2 miles of the boundary of an occupied lek during April 1 to July 15 where feasible.

Comment Response Code	Commenter ID	Comment summary	Response
BI-38	S-10	Commenter recommends reclamation efforts to restore native vegetation and avoid the spread of weeds and invasive species be targeted to restore native vegetation to sites and avoid spreading noxious weeds and annual invasive grasses, such as cheatgrass. Commenter recommends BMPs for addition to the EIS.	Mitigation measures in Section 6.0 of the Final Sentinel EIS have been revised as described below to be recommended to the decision maker. 1. BIO – 21 (BIO – 20 in the Draft EIS): The following text was added to the end of this mitigation measure: Planted species used in the revegetation efforts should match the native species composition present in and around the site to the extent possible. At rangeland/grassland sites, seed mixes should include at least three to four grass species, targeted to the specific site. In riparian areas, the planting of willows and/or cottonwoods (if site appropriate) may be used to replace woody cover; deciduous shrubs such as currant, chokecherry, native plum, wild rose, and buffaloberry may also be considered. 2. GEN – 21 has been revised to read: Clean all earthwork equipment before arriving at the site to begin construction, operations, or maintenance activities. Clean the equipment's tracks, skid plates, and other parts that can trap soil and debris from its previous off-site location. 3. BIO – 22 (BIO – 21 in the Draft EIS): The following sentence has been added to the beginning of this mitigation measure: Work with land managers as well as state and local county weed departments to develop and implement a plan to assess, treat, and monitor for weeds.
BI-39	S-10	Commenter recommends BMPs to lessen the risk of bird collisions with communication towers.	Mitigation measures outlined in Section 6.0 of the Final Sentinel EIS have been revised as described below to be recommended to the decision maker. 1. BIO – 56 (BIO – 53 in the Draft EIS): The following bullets have been added to this mitigation measure: • Constructing towers under 200 feet tall without supplemental lighting. • Collocating towers with existing development when feasible. When siting towers, avoid habitat features that congregate wildlife to the extent practical, such as water resources, habitat edges, and high-use movement areas. 2. BIO – 57 (BIO – 64 in the Draft EIS) has been revised to read: Construct self-supporting structures that do not require guy wires. If guy wires must be used, attach bird deterrent devices along the guy wires in accordance with USFWS MBTA guidance to minimize avian collisions with Project structures. Maintain these bird deterrent devices during operation of the project.

CULTURAL RESOURCES

Comment Response Code	Commenter ID	Comment summary	Response
CU-1	F-5	Commenter states that Square Butte is a state park, First Peoples Buffalo Jump State Park—believed to be the largest buffalo jump in the world.	Square Butte is not part of the First People's Buffalo Jump State Park; the butte is located approximately 10 miles southwest of the park boundaries. Although no information was provided by the commenter regarding the possible indigenous significance of Square Butte, none could be found by the author, and no such information has yet been provided to the Air Force during its tribal consultation efforts, an acknowledgment of the butte's potential as important to indigenous communities has been added to the text in Section 3.4 of the Final Sentinel EIS: As a prominent topographic feature of the horizon, Square Butte may also be important as an indigenous cultural site.
CU-2	F-5	Commenter states that the project's proximity and potential effects on Nez Perce National Historic Trail (NHT) should be discussed.	Information about the Nez Perce National Historic Trail (NHT) has been added to Section 3.4.2.1.2 of the Final Sentinel EIS, and a discussion of the potential effects on the integrity of the Nez Perce NHT in the eastern half of the missile field has been added to Section 3.4.2.2.2 of the Final EIS.
CU-3	I-19	Commenter questions whether logistics were conducted in the past to determine the best locations to minimize impacts on cultural resources.	In general, in the late 1950s and early 1960s, the military chose the Great Plains area to deploy the missiles for several reasons, including (1) the missiles' limited range required them to be launched over the North Pole to strike targets in the Soviet Union; (2) it was the furthest area from the Atlantic and Pacific coastlines out of range of submarine- and ship-based conventional weapons; (3) it was relatively close to existing Air Force bases for logistical support; and (4) the low population density would limit casualties in the event of a nuclear war. The original installation of the Minuteman III (MMIII) missile fields and associated infrastructure begin March 16, 1961; however, the National Historic Preservation Act (NHPA) was not enacted until approximately 5 years later, on October 15, 1966, and the National Environmental Policy Act approximately 9 years later, on January 1, 1970. The Air Force has no record of any environmental or cultural resource review for the original installation of the MMIII missiles.
CU-4	S-1	Commenter states that a Programmatic Agreement (PA) to guide compliance with Section 106 of the National Historic Preservation Act is being developed and, if completed before the Record of Decision (ROD) is signed and the PA and ROD language are consistent, they'll have no objection to the project.	Thank you for working with the Air Force to develop a PA to guide compliance with NHPA Section 106 for this undertaking. The Air Force intends to complete the PA prior to the signing of the ROD and to keep the language in the ROD and the PA consistent. The commenter's information has been added to the master stakeholder list for all future information distribution.

Comment Response Code	Commenter ID	Comment summary	Response
CU-5	T-1	Commenter questions why the Air Force cannot find a way to accomplish the project without affecting cultural resources.	The affected environment and environmental consequences associated with cultural resources are addressed in Section 3.4 of the Final Sentinel EIS. Both short-term and long-term significant effects would result to cultural resources, which include archaeological sites, historic resources, traditional tribal places, and historic architecture. Short-term effects would result from changes to the setting of resources. Long-term effects would occur from changes to setting as well as direct physical damage to cultural resources from ground-disturbing activities from all elements of Sentinel construction, from decommissioning and disposal of the MMIII facilities and conversion of launch facility trainers on-base to the Sentinel system. The Air Force has developed a PA for compliance with the NHPA with seven State Historic Preservation Officers (SHPOs), the Tribal Historic Preservation Officer (THPO) from the Mandan, Hidatsa and Arikara Nation (MHA Nation), nine federal cooperating agencies, 54 Native American tribal nations, and other heritage preservation partners across all seven states affected by the Sentinel Project to define ways to avoid, minimize, or, in some cases, mitigate adverse effects on historic properties or sites of tribal significance. The PA commits the Air Force to implementing those efforts should the Proposed Action be selected. This agreement is included in the Final Sentinel EIS as an appendix. Efforts to avoid or minimize adverse effects would be varied and include using available information about cultural resources to design and plan infrastructure and construction activities; collaborating with our partners to refine construction locations; conducting preconstruction surveys; protecting cultural resources located near construction activities; monitoring sites during construction activities to address inadvertent discoveries as work is being conducted; and training the construction workforce to respect and protect cultural resources they encounter during the project construction and operations. The Air Force also is proposing to conduct mitigation of the adverse effects that would remain. These include recording and documenting resources; collecting information about tribal contributions and oral histories related to the intercontinental ballistic missile (ICBM) program; and developing interpretive and educational materials for public access and use.

ENVIRONMENTAL JUSTICE

Comment Response Code	Commenter ID	Comment summary	Response
EJ-1	F-5	Commenter states that effects on environmental justice (EJ) populations go beyond excluding anyone, denying benefits, or subjecting populations to discrimination. Commenter states the EIS does disclose other effects, such as impacts on cultural resources and socioeconomics.	The EJ consequences text was revised per the comment to acknowledge impacts on cultural resources and socioeconomics in sections 3.5.1.2.1, 3.5.1.2.2, and 3.5.4.2.1 of the Final Sentinel EIS.

GEOLOGY AND SOILS

Comment Response Code	Commenter ID	Comment summary	Response
GE-1	F-5	Commenter states that the Department of the Interior (DOI) is required to manage paleontological resources under the Paleontological Resources Preservation Act. There are geologic formations of high and very high potential for paleontological resources within the project area. Commenter requests inclusion of BLM use of Potential Fossil Yield Classification (PFYC) system to characterize paleontological resources and quantify effects on geologic formations of high and very high potential for paleontological resources.	The following text was added to Section 3.6.1.2.1 of the Final Sentinel EIS: The PRPA directs land managers in Department of the Interior agencies and the USDA to manage and protect fossils using scientific principles and expertise. As a result, BLM characterizes paleontological resources using the Potential Fossil Yield Classification system.
GE-2	I-10	Commenter states that the area between mile markers 109 and 112 on U.S. Highway 52 in the Sawyer, ND, area would be a poor choice for a cable route because of steep hills, erosion concerns, and safety concerns.	The comment is consistent with Section 3.8 of the Final Sentinel EIS, which states that off-base elements of the Proposed Action would have short-term adverse effects on workers' safety during the time of construction. Information associated with the topography along Highway 52 provided in the comment has been forwarded to the prime contractor for serious consideration.
GE-3	I-22	Commenter states that project sites are located in areas of generally low geologic hazards and, provided unstable areas are avoided, should not present any geologic hazard-related issues during project construction.	This comment is consistent with Section 3.6, Geology and Soils, in the Final Sentinel EIS. All mitigation measures associated with geology and soils outlined in Section 3.6.8 will be recommended to the decision maker for implementation.
GE-4	I-22, S-11	Commenter states that, contrary to what the Draft EIS states, the State of Wyoming regulates the collection and removal of fossils on state lands.	The Final Sentinel EIS was updated to reflect that the state does regulate collection and removal on state lands as overseen by the Office of State Lands and Investments.

Comment Response Code	Commenter ID	Comment summary	Response
GE-5	I-28	Commenter states they are concerned about erosion from missile sites and would like the EIS to address erosion problems from construction.	The commenter's concerns will be added to the public record. Table 3.6-10 in the Final Sentinel EIS lists mitigation measures for geology and soils, including installing compost blankets and silt fences and implementing other construction best management practices (BMPs) for erosion and sediment control, developing site inspection and enforcing control measures, properly installing and maintaining erosion control devices (e.g., erosion control blankets and silt fences), and implementing all required measures related to the salvage, segregation, restoration, and recontouring of soils (as outlined and listed in other portions of the mitigation list and required for this Project). Information about soil erosion problems at the existing site (0-3) has been forwarded to the prime construction contractor for review and serious consideration.

HAZARDOUS MATERIALS AND WASTE

Comment Response Code	Commenter ID	Comment summary	Response
HM-1	F-3	Commenter states that EPA Headquarters issued a memorandum communicating existing requirements, including a requirement to assess alternative technologies for open burning/open detonation (OB/OD), and stated that the Draft EIS has no discussion of alternative technologies. Commenter recommends that the EIS contain information on the OB/OD process and that an alternative technology be assessed for each waste stream designated Resource Conservation and Recovery Act (RCRA) D003 reactive waste. Commenter states that UTTR will have to conduct alternative technology assessments for all their reactive waste streams before receiving a permit renewal to operate an OB/OD unit. Commenter recommends that the EIS discuss explosive waste decommissioning and note that alternative technology assessments must occur before a treatment method is chosen.	The Air Force was grateful for EPA's early coordination during the scoping process for the Sentinel EIS. EPA comments are focused on the decommissioning portion of the Sentinel Project and the potential for open burning/open detonation (OB/OD) of solid fuel. The Air Force understands the requirements under the Resource Conservation and Recovery Act (RCRA) and in 40 CFR Part 167; §§ 265.382, 264.601 for OB/OD of explosive waste and is aware of the new EPA policy memorandum on assessing alternative technologies and providing guidance to EPA regions, states, and territories for permitting OB/OD units under RCRA. UTTR has operated a permitted OB/OD facility since 2003, primarily focusing on the treatment of large rocket motors. The permit is issued by the Utah Department of Environmental Quality, Division of Waste Management and Radiation Control. Notably, UTTR conducts an alternative treatment technology assessment annually, in conjunction with the Army's Joint Munitions Command Demil Capabilities Division, as required by the RCRA treatment permit. In addition, the Utah Division of Air Quality Title V permit for UTTR addresses OB/OD emissions and sound impacts. All OB/OD operations at UTTR are conducted in conformance with these two governing permits, promoting the protection of the environment and surrounding communities. Assessment of alternative technologies will continue to be a key component of the UTTR OB/OD program. Section 3.1.4.2.2 of the Final Sentinel EIS, which discusses decommissioning of solid fuel, has been updated to include information on the current process for open burning of the solid fuel, the potential for alternative treatment (e.g., washout), and the alternative technology assessment that occurs annually in accordance with current permit requirements.
HM-2	I-14	Commenter states that workers at decommissioning sites should not be exposed to hazardous substances, including asbestos-containing materials (ACM) and lead-based paint (LBP).	Information on the handling of asbestos-containing materials (ACM) and lead-based paint (LBP) is provided in Section 3.7 of the Final Sentinel EIS. Any facility that is renovated or demolished on- or off-base would be inspected for ACM and LBP, and the appropriate state agencies would be notified before any demolition occurs. All necessary measures would be taken to minimize the disturbance of any ACM and LBP and to prevent any release of asbestos fibers. Removal of any friable ACM and LBP would be accomplished in accordance with all applicable federal, state, and local regulations.

Comment Response Code	Commenter ID	Comment summary	Response
HM-3	I-19	Commenter states that health and safety are their primary concerns.	Health and safety, including public health and safety, is addressed in Section 3.8 of the Final Sentinel EIS. The Proposed Action would have short-term less-than-significant adverse and long-term less-than-significant beneficial effects on health and safety of workers and short-term significant adverse effects on public health and safety. Short-term effects on workers would result from on- and off-base construction activities and MMIII decommissioning and disposal activities. Long-term beneficial effects on workers would be the result of reductions in operations and maintenance activities at all locations. Short-term significant adverse effects on public health and safety would be the result of the increase in the temporary workforce population, which would increase crime and put a strain on local medical, law enforcement, and firefighting resources if additional personnel and associated facilities and vehicles were not added. Table 3.8-31 in the EIS outlines both the mitigation measures required under existing plans, regulations, and guidelines and project-specific measures the Air Force is recommending to the decision maker to reduce or eliminate adverse effects associated with health and safety. In addition, the Air Force would implement on other federally managed properties all mitigation measures required by cooperating agencies, as outlined in Appendix A.
HM-4	N-5	Commenter states that the Draft EIS does not address commonly known potential hazards. Commenter lists many potential hazardous substances and states that a more thorough hazard assessment should be conducted before civilians begin work at the decommissioned sites.	The comment is consistent with the description of the hazardous materials that may be encountered during the renovation of the MAFs and LFs in Section 3.7.1.1.1 of the Final Sentinel EIS. The history of the development of and the materials at the MAFs and LFs is well documented. It is understood that renovating the MAFs and LFs could include remediation and disposal of potentially hazardous materials, including ACM, LBP, polychlorinated biphenyls (PCBs), petroleum, oils, and lubricants. In addition, the missiles themselves would contain a variety of hazardous materials, such as solid propellants, batteries, and oxidizers; however, these materials would be removed intact and transported to a contractor facility or one of the installations outlined in the EIS for decommissioning and disposal. Effects associated with these materials and the disposal methods that would be used are outlined in sections 3.7.1.2.2 and 3.7.1.2.3 of the EIS. It is not anticipated that other components outlined in the comment, such as hazardous and solid waste landfills, ordnance and explosives, or radioactive waste, would be encountered. If contaminated lands are encountered during construction activities, the Air Force and its contractors would ensure the area is remediated (when feasible) and all workers are adequately protected.

Comment Response Code	Commenter ID	Comment summary	Response
HM-5	S-3	Commenter states that North Dakota requirements for managing hazardous wastes must be complied with.	The affected environment and environmental consequences associated with hazardous materials and waste are addressed in Section 3.7 of the Final Sentinel EIS. The Air Force and its contractors will continue to coordinate with and meet all requirements of the North Dakota Department of Environmental Quality (NDDEQ). The following mitigation measure concerning asbestos has been added to Section 6.0 of the Final EIS to be recommended to the decision maker: HAZMAT – 16: Any facility that is to be renovated or demolished will be inspected for asbestos. Applicable State and Federal agencies will be notified prior to asbestos containing facilities being renovated or demolished. All State and Federal requirements will be followed to minimize the disturbance of any asbestos-containing material and to prevent any asbestos fiber release, including measures related to the handling, removal, transportation, and disposal of these materials.
HM-6	S-3	Commenter provides the text of a North Dakota requirement for managing hazardous wastes that must be complied with.	The affected environment and environmental consequences associated with hazardous materials and waste are addressed in Section 3.7 of the Final Sentinel EIS. The Air Force and its contractors will continue to coordinate with and meet all requirements of the NDDEQ.

HEALTH AND SAFETY

Comment Response Code	Commenter ID	Comment summary	Response
HS-1	F-5	Commenter states that the health and safety section of the EIS would benefit from further explanation of why the radiologic hazards are not analyzed.	The following text was added to Section 3.8.1.1 of the Final Sentinel EIS: There would be no increase or decrease in the number of missiles, changes in the DOE warheads, or generation or disposal of nuclear material; therefore, effects on health and safety from radioactivity were not carried forward for detailed analysis in the EIS.
HS-3	I-10	Commenter states there are better and flatter routes for a cable from Minot, ND, to Velva, ND, than via U.S Highway 52 because of the hills and water issues along the route.	The comment is consistent with the environmental consequences associated with health and safety addressed in Section 3.8 of the Final Sentinel EIS. There would be a short-term minor adverse effect from an increase in worker health and safety during off-base construction activities. To minimize the risk during these activities, the Air Force and any contractors would comply with all local, state, and federal health and safety regulations and implement all health and safety mitigation measures outlined in Section 6.0 of the EIS. This comment has been forwarded to the prime contractor for serious consideration and informational purposes before fieldwork begins.
HS-4	I-17	Commenter states that the EIS description of the 300-foot communications towers does not describe noise issues or microwave transmissions that could be adverse. Commenter recommends that the EIS have more information and analysis on these issues.	Effects on the noise environment from the proposed communication towers is outlined in sections 3.10.1.2.2, 3.10.2.2.2, and 3.10.3.2.2 of the Final Sentinel EIS. Operations and maintenance activities at the proposed communication towers would have long-term less-than-significant adverse effects on the noise environment. Under normal operating conditions, the proposed communication towers would not actively make any noise. The effects would be the result of the addition of backup generators at the sites that would be operated approximately 100 hours per year during power outages and periodic maintenance testing during daytime hours. During the limited times when a backup generator is operating, noise would be loud directly adjacent to the generator itself (i.e., more than 80 decibels [dBA]) and audible for approximately one-quarter mile, beyond which it would not be noticeably louder than existing background noise levels. Noise from a backup generator would diminish to approximately 60 dBA, the level of normal speech, near the fence lines of the communication towers. In addition, it is anticipated that wind moving through the guy wires and the structure itself would generate a passive low-level audible hum directly adjacent to the communication towers. The environmental effects of radio frequency (RF) fields from the proposed communication towers are outlined in Section 3.8.1.2.2 of the EIS. Each transmitter's power would be comparable to that of a cellular tower, and it is expected that the RF levels near the base of the tower would be many times lower than the Federal Communications Commission (FCC) maximum permissible exposure level (i.e., 580 microwatts per square centimeter). To be exposed to RF levels in excess of the FCC guidelines, an individual would have to remain 200–300 ft off the ground a few feet in front of the transmitter while it was operating at maximum power for several minutes or longer. Thus, the possibility that a member of the public would be exposed to RF levels in excess of the FCC guidelines is very unlikely under normal conditions.

Comment Response Code	Commenter ID	Comment summary	Response
HS-5	L-2	Commenter states a concern regarding public safety and the services the Sheriff's office provides, particularly concerning the size of the Fergus County detention facility, including other issues, such as the need for more streetlights.	The commenter's concerns related to public health and safety in relation to the Proposed Action are consistent with the affected environment and environmental consequences sections for health and safety presented in Section 3.8 of the Final Sentinel EIS. The Proposed Action and the Reduced Utility Corridors Alternative would have significant adverse effects on public health and safety. These effects would primarily be due to the possibility of increased crime in the Lewistown area and the strain on existing law enforcement and medical personnel and facilities. These effects do not account for the recommended mitigation measures identified in Section 3.8.8 and Table 3.8-31 that have been recommended to minimize the potential for increased crime in and around the workforce hubs. These measures recommend that the Air Force and its contractors would do the following: • Ensure that all facilities and their occupants comply with the Air Force and construction contractor's code of conduct and requirement for employment. • Establish a Code of Conduct to control and manage behavior in all proposed workforce hubs and project sites. The Code of Conduct would address workforce hubs and project site access control procedures, firearms policies, disruptive or abusive behavior, alcohol use, smoking and fire safety policies, and criminal/illegal activities. All workforce hub residents and employees must agree to abide by the conditions of the Code of Conduct or risk losing their residency and/or employment status. • Screen their respective potential employees for violent crimes or sexual offenses convictions. • Provide mental health counseling to workers, as appropriate. • Provide on-site amenities and recreational facilities for workers. • Conduct drug testing of all Sentinel Project workers. • Implement a zero-tolerance policy, in which individuals convicted of any misdemeanor or felony, other than minor traffic infractions, risk losing their residency and/or employment status. • Provide medical personnel, security, and an infirmary at the workforce hubs. • Maintain emergency response readiness. • Provide enhanced policing and security personnel and policies specifically designed to limit criminal behavior associated with the workforce hubs. • Monitor the regional crime rates and implement policies to limit the effects on these rates caused by project staff. This list is not all-inclusive. The Air Force would continue to coordinate with local officials to minimize the effects on public health and safety in the area.

Comment Response Code	Commenter ID	Comment summary	Response
HS-6	T-2	Commenter states a concern about the workforce visiting casinos and the implications for law enforcement on the Fort Berthold Indian Reservation. Commenter requests information about the duration of projects activities on the reservation and whether temporary workforce personnel are to have background checks. Commenter also mentions the potential for project digging to affect cultural resources.	The activities in the Minot AFB missile field would begin approximately during the period identified in the comment. The Air Force would continue to coordinate closely with the Three Affiliated Tribes, especially with respect to the portion of the Minot AFB missile field on the Fort Berthold Indian Reservation. These areas include one MAF and 15 LFs. The Proposed Action would include the demolition, reconstruction, and construction necessary to prepare all MAFs and LFs to accommodate the Sentinel weapon system, including those on Fort Berthold. These activities would be confined primarily to the existing MAF and LF locations. As shown in Figure 2.1-14 in the Final Sentinel EIS, proposed new utilities would be installed adjacent to Route 23 and Route 37. Temporary construction workers would be bused to and from the construction sites daily from a temporary workforce hub that would be located in Minot. A detailed description of the off-base activities is provided in sections 2.1.6.3, 2.2.6.3, and 2.3.6.3 of the EIS. Measures identified in Section 2.1.6.3, Section 3.8.8, and Table 3.8-31 in the EIS would be implemented to minimize the potential for increased crime from temporary workers. The hiring process for workers would be selective, and the workforce hub where temporary workers from outside the region would live would be tightly controlled. Background checks would be conducted as part of the hiring process for all temporary workers and no one who is a registered sex offender or has been convicted of a violent crime would be eligible for employment. A zero-tolerance policy would be in place to address unlawful activity by temporary workers and frequent drug testing would be conducted for all workers. The workforce hub would include on-site amenities and recreational facilities, and mental health counseling would be provided as needed. The workforce hub would be patrolled by on-site security officers and access to the property would be tightly controlled, similar to the access control on a military installation. The affected environment and environmental consequences associated with cultural resources are addressed in Section 3.4 of the Final EIS. Both short-term and long-term significant effects would impact cultural resources, which include archaeological sites, historic resources, traditional tribal places, and historic architecture. Short-term effects would result from changes to the setting of resources. Long-term effects would occur from changes to the setting as well as direct physical damage to cultural resources from ground-disturbing activities from all elements of Sentinel construction, from decommissioning and disposal of the MMIII facilities and conversion of launch facility trainers on-base to the Sentinel system. The Air Force has developed a PA for compliance with the NHPA with seven SHPOs, the THPO from the MHA Nation, nine federal cooperating agencies, 54 Native American tribal nations, and other heritage preservation partners across all seven states affected by the Project to define ways to avoid, minimize, or, in some cases, mitigate adverse effects on historic properties or sites of tribal significance. The PA commits the Air Force to implementing those efforts should the Proposed Action be selected. This agreement is included in the Final EIS as an appendix. Efforts to avoid or minimize adverse effects would be varied and include using available information about cultural resources to design and plan infrastructure and construction activities; collaborating with our partners to refine

Comment Response Code	Commenter ID	Comment summary	Response
			construction locations; conducting preconstruction surveys; protecting cultural resources located near construction activities; monitoring sites during construction activities to address inadvertent discoveries as work is being conducted; and training the construction workforce to respect and protect cultural resources they encounter during the project construction and operations. The Air Force also is proposing to conduct mitigation for the adverse effects that would remain. These include recording and documenting resources; collecting information about tribal contributions and oral histories related to the ICBM program; and developing interpretive and educational materials for public access and use.

LAND USE

Comment Response Code	Commenter ID	Comment summary	Response
LU-1	F-5	Commenter states that work conducted within a fence line might require a ROW, noting that location is not a requirement as to whether a ROW grant is necessary. Commenter suggests a text edit to correct this.	In the Final Sentinel EIS, text in Section A.1.7 of Appendix A has been revised to indicate: Work within the fence line may result in fewer resource effects, but a ROW grant would still be required for work within the fence line and for temporary use of an adjacent 1-acre area for storage of construction materials and equipment.
LU-2	F-5	Commenter recommends adding a statement in Appendix A indicating that portions of the Proposed Action might be on BLM-administered lands outside Malmstrom AFB and that applications for such activities should be directed toward the appropriate field office.	The following sentence has been added to the end of the first paragraph in Section A.1.8 of Appendix A: Incidental portions of the proposed action may also exist on BLM-administered lands outside the Malmstrom AFB missile field. Applications for those facilities would be directed toward the appropriate field office and managed under the applicable land use plan for that area.
LU-4	N-5	Commenter states that decommissioning sites could be economically beneficial if the sites are available for public purchase once decommissioning is complete.	As outlined in sections 2.1.6.3, 2.2.6.3, and 2.3.6.3 of the Final Sentinel EIS, all existing MAFs and LFs would be renovated to like-new condition, no facilities would be decommissioned, and the Air Force would retain the property. During construction, however, a 1-acre temporary easement would be acquired adjacent to the facilities, which would be returned to the landowner upon completion of the construction phase.
LU-5	N-16	Commenter recommends that access to agricultural assets for landowners be considered and coordinated with them to ensure that access is not blocked or restricted.	Leading up to the implementation of the Proposed Action throughout the Malmstrom AFB missile field, the Air Force would contact affected landowners on a case-by-case basis and coordinate access to individual parcels of land.

Comment Response Code	Commenter ID	Comment summary	Response
LU-7	S-8	Commenter states that the North Dakota Department of Trust Lands (NDDTL) manages multiple tracts of land within the proposed project area and has a project review and agreement acquisition process for proposed projects. Commenter provides NDDTL contact information. Commenter states that proposed projects crossing NDDTL-managed property would need to apply for a ROW and would be subject to review and approval by the Board of University and School Lands, noting that NDDTL reviews multiple factors in its review process.	It is understood that the North Dakota Department of Trust Lands (NDDTL) manages multiple tracts of land within the proposed project area, and the contact information provided has been forwarded to the Air Force's real estate team. Site selection guidelines for utility corridors are outlined in Section 2.1.6.3 of the Final Sentinel EIS. These guidelines are consistent with the NDDTL approach to project selection, including the following: • Utility corridors would be located within or along existing utility easements and corridors wherever possible. • Utility corridors located along existing roadways would be sited in accordance with state and county DOT requirements and sound engineering practice. • Utility corridors located along existing roadways would be sited as close to the roads as possible without undermining their structural integrity. • Utility corridors not able to be located along existing roadways would be sited along the most practicable path to minimize effects on public and private property and sensitive resources in the area. • If sensitive resources are identified near potential sites, the Air Force would consider actions to avoid or minimize adverse effects to the maximum extent practicable. Leading up to the implementation of the Proposed Action throughout the Minot AFB missile field, the Air Force would contact affected landowners on a case-by-case basis. The Air Force would arrange for contractual real estate transactions with individual landowners who would be fully compensated for the acquired properties. In cases in which access is not granted by the property owner, the government might employ use of eminent domain (i.e., the compulsory acquisition of private property for public use) to secure the necessary access and property rights to the land. Any proposed projects crossing NDDTL-managed property would need to apply for a ROW and would be subject to review and approval by the Board of University and School Lands.
LU-8	S-9	Commenter states that reviews of water projects should evaluate appropriate alternatives that minimize impacts on stakeholders who might not directly benefit from the project. Commenter states that stakeholder input is important and that transactions should be willing-seller and willing-buyer based.	The real estate process would continue to include the input of the stakeholders and strive for transactions that are willing-seller based. The Air Force would arrange for contractual real estate transactions with individual landowners who would be fully compensated for the acquired easements. In cases in which access is not granted by the property owner and the Air Force is unable to "construct around" the property, the government might employ the use of eminent domain (i.e., the compulsory acquisition of private property for public use) to secure the necessary access and property rights to the land.

Comment Response Code	Commenter ID	Comment summary	Response
LU-9	T-1	Commenter questions why Native communities are required to move when federal projects are undertaken.	The affected environment and environmental consequences associated with land use are addressed in Section 3.9 of the Final Sentinel EIS. The Proposed Action will require the acquisition of utility easements and land in fee for communication towers in the three missile fields. While the Air Force recognizes the impacts of past federal actions on Native communities, including the MHA Nation, the Proposed Action is not anticipated to require the relocation of any individuals or residents, including Native Americans or the members of any Tribe.

PROPOSED ACTION AND ALTERNATIVES

Comment Response Code	Commenter ID	Comment summary	Response
PA-2	F-7	Commenter requests that a sentence be added in Appendix A stating that site-specific locations and detailed maps will be available prior to implementation.	The following sentence has been added to the end of Section A.1.4 of Appendix A, as recommended: Site-specific locations and detailed maps will be available prior to implementation.
PA-6	I-18	Commenter requests some clarity about what would be disposed of and whether it would be radioactive.	The MMIII decommissioning and disposal process is addressed in Section 2.1.5 of the Final Sentinel EIS. It would encompass facilities as well as missiles. Demilitarizing and disposing of facilities would include removing MMIII-related technology and support equipment from the MAFs and LFs; transporting debris and materials to F.E. Warren, Malmstrom, or Minot AFB; and sorting, declassifying, and disposing of materials based on standardized protocols. Each of the Sentinel deployment and support locations would perform the carefully established steps of the MMIII ICBM demilitarization and disposal process for which it is responsible. Separate responsibilities for U.S. nuclear weapons reside in the Department of Defense (DoD) and the Department of Energy (DOE). DoD develops, deploys, and operates the weapon system platforms that deliver nuclear warheads. DOE and its semiautonomous National Nuclear Security Administration oversee the research, development, and acquisition programs that produce, maintain, and sustain nuclear warheads. The proposed Sentinel missiles would support the DOE components, including variations of currently fielded warheads as well as delivery of the currently fielded and future reentry vehicles. The Proposed Action does not include the generation or disposal of nuclear material, and the number of land-based nuclear missiles would remain unchanged.
PA-7	I-19	Commenter expressed concern about Native Americans being displaced as a result of the project.	The Proposed Action is addressed in Section 2.1 of the Final Sentinel EIS, including a description of the demolition and reconstruction of MAFs and LFs, existing and new utility corridors, and new communication towers. The affected environment and environmental consequences associated with land use are addressed in Section 3.9 of the EIS. The Proposed Action will require the acquisition of utility easements and land in fee for communication towers in the three missile fields. While the Air Force recognizes the impacts of past federal actions on Native communities, the Proposed Action is not anticipated to require the relocation of any individuals or residents, including Native Americans or the members of any Tribe.

Comment Response Code	Commenter ID	Comment summary	Response
PA-9	L-1	Commenter requests information on which parcels of land the project will need access to for utility corridors and the work to be done on them.	The installation activities and routes for the proposed utility corridors are described in Section 2.1.7.3 of the Final Sentinel EIS. Access to individual parcels of land would be determined and coordinated on a case-by-case basis. The project real estate team will be coordinating with each landowner on rights-of-entry to conduct any required surveys for wetlands, sensitive habitat or species, and cultural resources, which will be done to help the Air Force and the prime contractor both microsite segments of the new utilities and identify what mitigation methods would be implemented by the prime contractor. Once necessary information has been obtained, the Air Force and the prime contractor would finalize utility routes and the real estate team would coordinate with individual landowners to begin negotiating ROWs, easements, and purchase agreements.
PA-11	N-15	Commenter recommends that the EIS evaluate and assess the use of nuclear power to meet the electrical needs of the project and future electrical needs.	None of the on- or off-base elements, including the proposed utility corridors, identified in the Proposed Action or Reduced Utility Corridors Alternative, include the establishment of new or different sources of electricity or appreciable changes in the electrical grid at or near any existing or proposed facilities. In addition, the use of advanced nuclear reactors has not been planned or programmed at any of the installations or locations or in the missile fields identified in the Final Sentinel EIS. Therefore, the use of advanced nuclear reactors was not carried forward for detailed analysis in the EIS, as either part of or an alternative to the Proposed Action. The information provided in the comment has been forwarded to the prime contractor for review. If the use of advanced nuclear reactors was to become a planned or programmed feature at any of the installations or in the missile fields, additional NEPA analysis would be required.
PA-14	T-2	Commenter expresses a concern about the workforce growth, requested information on what is to be disposed of during the project, and asked how many project facilities are on the Fort Berthold Indian Reservation.	A portion of the Minot AFB missile field that includes one MAF and 15 LFs is on the Fort Berthold Indian Reservation. The Proposed Action includes the demolition, reconstruction, and construction necessary to prepare all MAFs and LFs to accommodate the Sentinel weapon system, including those on the reservation. These activities would be confined primarily to the existing MAF and LF locations. As shown in Figure 2.1-14 in the Final Sentinel EIS, proposed new utilities would be installed adjacent to Route 23 and Route 37. Temporary construction workers would be bused to and from the construction sites daily from a temporary workforce hub that would be located in Minot. A detailed description of the off-base activities is provided in sections 2.1.6.3, 2.2.6.3, and 2.3.6.3 of the EIS.

SOCIOECONOMICS

Comment Response Code	Commenter ID	Comment summary	Response
SE-4	I-21	Commenter states that Lewistown is a small community without the infrastructure to support a large influx of workers and that Great Falls would be more capable of handling the population increase.	To reduce the strain on local infrastructure from the influx of temporary workers, two workforce hubs are proposed for the Malmstrom AFB missile field—one in Great Falls and one in Lewistown. Site selection guidelines for and details on the size, characteristics, and operation of the workforce hubs are provided in Section 2.1.6.3 of the Final Sentinel EIS. Each hub would include primarily barracks-style modular housing for the workers in the missile field and include food services, recreational facilities, and support services staff quarters. It also would contain an administrative and training area and substantial parking facilities. It would be self-supporting where possible or use locally available utilities, including water, wastewater treatment, and telecommunications and would remain in place for 2–5 years during missile field construction activity. Upon completion of the off-base elements of the Proposed Action, the site of the workforce hub would be returned to the condition agreed upon with local stakeholders. Common areas would be transferred to the community, or the hub would be removed, and disturbed areas would be reseeded and restored, as appropriate. The Air Force and any contractors would coordinate with city and county officials before selecting sites for the temporary facilities and obtain permits as necessary to meet all local zoning requirements. The temporary workforce hubs and laydown areas would be in full compliance with local planning requirements and plans. Wherever possible, the workforce hubs would not be collocated with or adjacent to residential neighborhoods, schools, churches, parks, historic buildings or sites, or other sensitive viewing areas and would be located to provide direct access to major highways and primary roadways suitable for the additional construction traffic; and traffic routes would be established, as necessary, to avoid downtown areas. Additional mitigation measures associated with the workforce hubs to reduce the impacts on communities are outlined in Section 6.0 of the EIS. Notably, given the distance between the sites, it is unlikely the Air Force could realistically locate all the workers in the Great Falls area.
SE-5	I-24	Commenter states that the adverse impacts on cultural, educational, recreational, health care, and law enforcement resources in central Montana outweigh the beneficial economic benefits.	The comment is consistent with Section 3.11, Socioeconomics, and Section 3.8, Health and Safety, in the Final Sentinel EIS, whereas there would be a short-term significant adverse effect on public health and safety from a potential increase in crime in the area and strain on local medical and law enforcement personnel and facilities. These effects would coincide with a beneficial economic effect from the increase in temporary employment in the area. The commenter's opposition to the Proposed Action will be added to the public record.

Comment Response Code	Commenter ID	Comment summary	Response
SE-6	L-1	Commenter states that additional workers in small towns will impact the local economy and infrastructure.	The affected environment and environmental consequences associated with socioeconomics are addressed in Section 3.11 of the Final Sentinel EIS. Section 3.13 of the EIS addresses the affected environment and environmental consequences associated with utilities and infrastructure. These sections include assessments of the effects of the temporary workforce on the local economy and infrastructure.
SE-8	N-6	Commenter states they are interested in what would remain of the workforce hubs once the project is completed. Commenter requests consistent communication with the government regarding construction and closure of workforce hubs.	Site selection guidelines for and details on the size, characteristics, and operation of the workforce hubs are provided in Section 2.1.6.3 of the Final Sentinel EIS. Each hub would include primarily barracks-style modular housing for the workers in the missile field and include food services, recreational facilities, and support services staff quarters. It also would contain an administrative and training area and substantial parking facilities. It would be self-supporting where possible or use locally available utilities, including water, wastewater treatment, and telecommunications, and would remain in place for 2–5 years during missile field construction activity. Upon completion of the off-base elements of the Proposed Action, the site of the workforce hub would be returned to the condition agreed upon with local stakeholders. Common areas would be transferred to the community, or the hub would be removed, and disturbed areas would be reseeded and restored, as appropriate. The Air Force and any contractors would coordinate with city and county officials before selecting sites for the temporary facilities and obtain permits as necessary to meet all local zoning requirements. The temporary workforce hubs and laydown areas would be in full compliance with local planning requirements and plans. Wherever possible, the workforce hubs would not be collocated with or adjacent to residential neighborhoods, schools, churches, parks, historic buildings or sites, or other sensitive viewing areas and would be located to provide direct access to major highways and primary roadways suitable for the additional construction traffic; and traffic routes would be established, as necessary, to avoid downtown areas. Additional mitigation measures associated with the workforce hubs to reduce the impacts on communities are outlined in Section 6.0 of the EIS.

TRANSPORTATION AND TRAFFIC

Comment Response Code	Commenter ID	Comment summary	Response
TR-1	I-16	Commenter expresses concern about and requests information on the location of workforce hubs. Commenter notes that local roads are now at capacity in some situations.	Selection criteria for location of the workforce hubs and laydown areas are outlined in Section 2.1.6.3 of the Final Sentinel EIS. The Air Force and any contractors would coordinate with city and county officials before selecting sites for the temporary facilities and obtain permits as necessary to meet all local zoning requirements. The temporary workforce hubs and laydown areas would be in full compliance with local planning requirements and plans. Wherever possible, the workforce hubs would not be collocated with or adjacent to residential neighborhoods, schools, churches, parks, historic buildings or sites, or other sensitive viewing areas and would be located to provide direct access to major highways and primary roadways suitable for the additional construction traffic; and traffic routes would be established, as necessary, to avoid downtown areas. The affected environment and environmental consequences associated with transportation and traffic are addressed in Section 3.12 of the EIS. Tables 3.12-6, 3.12-12, and 3.12-17 outline the estimated number of vehicles accessing the workforce hubs, and Table 3.12-7 breaks down the vehicle types. As an example, and for comparison, the number of bus trips for the day shift at each workforce hub would be similar to the number of buses that might be arriving at and leaving from a large high school each weekday. The transportation and traffic in the missile field required to support the construction activities would occur in areas of low average daily traffic and level of service as expected, based on the low population density in the primarily agricultural and rangeland area. In general, because of the extensive use of buses at the workforce hubs, the number of vehicles related to the Proposed Action would be relatively limited and would not change the level of service on the local roadways.
TR-3	I-28	Commenter expresses concern about traffic that will be on county roads and notes that large, unflagged agricultural equipment is frequently on the roads.	The commenter's concerns will be added to the public record. It is understood that agricultural equipment is frequently on county roads with no flag vehicles to alert oncoming traffic over hills. Final Sentinel EIS Section 3.12.1.2.2 acknowledges the short-term less-than-significant impacts from the construction work in the F.E. Warren AFB missile field. Table 3.12-6 presents the estimated number of vehicles per day that would be used for construction at the various work sites at typical and peak construction periods. Table 3.-12-21 lists mitigation measures that would be implemented to reduce or eliminate adverse effects, including planning routes and schedules for construction vehicles to maximize transportation safety and minimize potential conflicts with other traffic; posting caution signs on county- and state-maintained roads, as needed or appropriate, to alert motorists of construction and warn them of slow traffic; and using traffic control measures, such as traffic control personnel, warning signs, lights, and barriers, during construction to ensure safety and to minimize traffic congestion.

Comment Response Code	Commenter ID	Comment summary	Response
TR-4	S-2, S-11, I-22	Commenter states numerous permitting, licensing, and other requirements of work conducted in state ROWs and on state roads and highways.	The Air Force and its contractors will continue to coordinate with and meet all requirements of the Wyoming Department of Transportation (WYDOT) as well as other state and federal transportation agencies, as necessary. Licensing, permitting, and other requirements outlined in the comment have been added to the list of mitigation measures in Section 6.0 of the Final Sentinel EIS to be recommended to the decision maker: 1. TRANS – 17: Obtain all necessary permits related to work within the Wyoming Department of Transportation (WYDOT) right-of-way, including utility licenses for all highway crossings as well as access permits for any operation/maintenance of project roads. Restore all temporarily disturbed areas within the WYDOT right-of-way to preconstruction conditions. 2. TRANS – 18: For Project components in Wyoming: • Control traffic per the Manual on Uniform Traffic Control Devices for streets and highways. • Develop a traffic control plan for Project component deliveries in collaboration with the Wyoming Department of Transportation (WYDOT), Wyoming Highway Patrol, and local law enforcement. • Develop detailed site-specific plans for overweight limits (OWL) turnarounds/closures at interchanges, intersections, or median crossovers. These plans shall reference WYDOT standard plans for Planned Event Turnaround. • Provide operational analysis/design for major intersections or interchanges affected by the Project. These designs shall identify temporary improvements/changes that would be made to accommodate OWL's. All OWL hauling companies would be required to demonstrate to the WYDOT that they have proper experience and certifications to perform the work. • Submit to the Federal Highway Administration (FHWA) for approval any modifications to 1-80 Interchange ramps and ensure that all WYDOT right-of-way markers are undisturbed while implementing the modifications. • License through the WYDOT District Maintenance Office any incoming or outgoing utilities located within the WYDOT right-of-way.
TR-6	S-4	Commenter states that before doing work in highway ROWs, appropriate permits and risk management documents need to be obtained.	The affected environment and environmental consequences associated with transportation and traffic are addressed in Section 3.12 of the Final Sentinel EIS. It is understood that, for any work to be done on a highway ROW, appropriate permits and risk management documents must be obtained from the Department of Transportation District Engineer.

UTILITIES AND INFRASTRUCTURE

Comment Response Code	Commenter ID	Comment summary	Response
IN-1	F-3	Commenter states that increased wastewater generation on AFBs would represent 40–76 percent of the remaining capacity of receiving publicly owned treatment works (POTWs). Commenter recommends the Air Force notify municipalities because changes to volume or quality of base discharges might not be considered within normal operating conditions at receiving POTWs and could cause functional problems and permit violations.	The following mitigation measure has been added to those listed in Section 6.0 of the Final Sentinel EIS to be recommended to the decision maker: UTILITIES – 13: Notify applicable municipalities with approved Pretreatment Programs or Control Authorities (such as the City of Cheyenne Publicly Owned Treatment Works [POTW] and the City of Great Falls POTW), as well as other municipalities without approved Pretreatment Programs that own and operate POTWs, of the anticipated wastewater discharge that will emanate from on-base operations. Notification will ensure the POTWs are aware of changes in discharges from the on-base facilities and determine if these changes in discharge may impact their POTW or wastewater collection system. The municipalities are responsible for ensuring that their effluent discharges do not violate the Clean Water Act (CWA) and may need to increase treatment or resources to ensure the proper operation of their POTWs.
IN-2	F-3	Commenter states that increases in utility use and wastewater disposal will occur because of workforce hubs and recommends notifying receiving POTW operators.	The following mitigation measure has been added to those listed in Section 6.0 of the Final Sentinel EIS to be recommended to the decision maker: UTILITIES – 13: Notify applicable municipalities with approved Pretreatment Programs or Control Authorities (such as the City of Cheyenne Publicly Owned Treatment Works [POTW] and the City of Great Falls POTW), as well as other municipalities without approved Pretreatment Programs that own and operate POTWs, of the anticipated wastewater discharge that will emanate from on-base operations or the workforce hubs. Notification will ensure the POTWs are aware of changes in discharges from the on-base facilities or workforce hubs and determine if these changes in discharge may impact their POTW or wastewater collection system. The municipalities are responsible for ensuring that their effluent discharges do not violate the Clean Water Act (CWA) and may need to increase treatment or resources to ensure the proper operation of their POTWs.

Comment Response Code	Commenter ID	Comment summary	Response
IN-3	F-3	Commenter recommends providing treatment specifications information to the regulating authority/permitting authority for workforce hubs that would have a designated package plant or other sanitary sewage treatment unit. Commenter recommends notifying the area NPDES permitting authority in advance of location selection to avoid impaired streams, low-flow streams, and streams with total maximum daily load (TMDL) limitations.	The following mitigation measure has been added to those listed in Section 6.0 of the Final Sentinel EIS to be recommended to the decision maker: GEN – 23: Notify the National Pollutant Discharge Elimination System (NPDES) Permitting Authority if workforce hubs contain a designated package plant or other sanitary sewage treatment unit, to support optimal parameters for the discharge from the plant/unit. Placement of these facilities should avoid impaired streams, low flow streams, or streams with Total Maximum Daily Load (TMDL) limitations.
IN-4	F-3	Commenter recommends the Final EIS include information on sampling requirements, proper treatment, and disposal of contaminated water associated with drilling drinking water wells and a discussion of state groundwater regulations.	The following additional information on groundwater regulations and permitting has been added to the Water Resources Environmental Consequences sections in the Final Sentinel EIS: • Section 3.15.2.2: The Montana Department of Natural Resources and Conservation administers licensing for drilling of water wells. • Section 3.15.3.2: NDDEQ also administers a Groundwater Protection Program. Construction of water wells and installation of pumps and pitless units is regulated under Water Well Construction Rules – North Dakota Administrative Code 33.1-18-01. Additionally, mitigation measure WATER – 13 has been added to Section 6.0 of the EIS, which includes the statement that Any new wells developed as part of the Project, if needed, will also be registered with the applicable state's DNR office.
IN-5	F-3	Commenter recommends consulting with wastewater operators and North Dakota Department of Environmental Quality (NDDEQ) before releasing project-related discharges to the Minot AFB wastewater treatment facility (WWTF) lagoons and that notice of any planned substantial changes to sewage sludge facilities and sludge management practices be provided to the implementing authority.	The following mitigation measure has been added to those listed in Section 6.0 of the Final Sentinel EIS to be recommended to the decision maker: UTILITIES – 14: Consult with the wastewater operators and the North Dakota Department of Environmental Quality before releasing Project-related discharges to the Minot AFB wastewater treatment facility (WWTF) lagoons to ensure there are no adverse effects on the permitted receiving stream. Any planned substantial changes to the existing sewage sludge facilities, the manner of their operations, or to current sewage sludge management practices of storage and disposal, requires the Air Force to give notice to the implementing authority.

Comment Response Code	Commenter ID	Comment summary	Response
IN-6	F-3	Commenter recommends the inclusion in the EIS of additional information regarding plans for upgrading the sewage lagoons at each missile alert facility (MAF).	Language in the Final Sentinel EIS has been updated as requested in the comment. The following text has been added to Section 3.13.1.1.2: The lagoons are non-discharging, so no NPDES permit is required. Each site with a lagoon has a wastewater operator exemption letter that is renewed every 4 years. The lagoons are maintained regularly and pumped out as needed. The contractor performing these services must be properly licensed in the county and/or state where the site is located, as required by law for cleaning and transporting sewage. The contractor also must dispose of any waste in a permitted disposal facility and within county and/or state regulations. A permit is not required to pump out the lagoons. The following text has been added to the section on F.E. Warren AFB off-base utilities and infrastructure (Section 3.13.1.2.2): For example, if sludge was to be cleaned out and land applied, the appropriate state agency would be notified and a biosolids permit would be obtained if required. Construction at the LFs is not expected to result in wastewater discharges. However, ground disturbance at each site will be more than 1 acre, so an NPDES stormwater discharge permit would be required for each site. after the sentence: For MAF sites that would be reconstructed, existing wastewater treatment systems to be reused would be inspected, cleaned, and kept consistent with current permit standards and any required new permits. This also applies to the other missile wings. The Environmental Consequences sections for Malmstrom and Minot AFBs note that the nature and level of effects from construction will be similar to those for F.E. Warren AFB. The following text was added to the section on Malmstrom AFB off-base utilities and infrastructure (Section 3.13.2.1.2): “The lagoons are non-discharging, so no NPDES permit is required.” The following text was added to the section on Minot AFB off-base utilities and infrastructure (Section 3.13.3.1.2): “The lagoons are permitted and must comply with NPDES permit requirements.”
IN-7	F-5	Commenter requested that text in Appendix A be changed from “grants for utility corridors” to “ROW grants”.	Language in Section A.1.7 of Appendix A of the Final Sentinel EIS has been changed from “grants for utility corridors” to “ROW grants” as requested in the comment.
IN-8	F-8	Commenter requests a language change in Appendix A.	Section A.1.7 of Appendix A of the Final Sentinel EIS has been revised to change “seven ROW grant applications” to “multiple ROW grant applications.”

Comment Response Code	Commenter ID	Comment summary	Response
IN-10	N-1	Commenter recommends the Air Force work with the local electric utility to locate new communication towers, material laydown yards, and workforce hubs near existing electric utility infrastructure.	The comment is consistent with sections 2.1.6.3, 2.1.7.3, and 2.1.8.3 of the Final Sentinel EIS. Temporary workforce hubs and laydown areas would be sited near or adjacent to existing utility infrastructure (e.g., water, sewer, waste, power, and communication systems) wherever possible. The primary siting requirements for the proposed communication towers would be locations that would provide the most effective, secure radio communication/ coverage possible throughout the missile fields. The Air Force would coordinate with the appropriate electricity supplier to determine the utility line route from the nearest electric utility access point at all tower sites, workforce hubs, and laydown areas.

VISUAL RESOURCES

Comment Response Code	Commenter ID	Comment summary	Response
VI-1	I-21	Commenter states their property is near a missile site and questions what if any activity will be occurring at that site. Commenter is concerned about potential visual impacts.	Sections 2.1.6.3, 2.2.6.3, and 2.3.6.3 of the Final Sentinel EIS describe construction activities at each of the LFs. The Proposed Action includes the demolition, reconstruction, and construction necessary to prepare all 450 LFs to accommodate the Sentinel weapon system. This would include (1) dismantling and removing from the LFs MMIII equipment, supplies, components, and infrastructure not suitable for use with the Sentinel weapon system; (2) abatement of hazardous materials (e.g., asbestos, ACM, LBP, and PCBs); and (3) installing equipment, supplies, components, and infrastructure necessary to support the Sentinel Program. Reconstructed LFs would be confined to areas within the property boundaries; however, an approximately 1-acre easement beyond the property boundary would be acquired to accommodate temporary storage of construction materials and equipment for each site. Construction at the individual sites would last for 6–9 months. The affected environment and environmental consequences associated with visual resources are addressed in Section 3.14 of the Final EIS. Because of the disruptive nature of construction, the off-base elements of the Proposed Action would result in short-term less-than-significant adverse effects on visual resources. In the long-term, the existing elements in the missile field (e.g., at the LFs) would revert to their preconstruction condition. There would be no ongoing or long-term effects on visual resources from the refurbished MAFs and LFs adjacent to recreation areas frequented by residents.

WATER RESOURCES

Comment Response Code	Commenter ID	Comment summary	Response
WR-1	F-3	Commenter states the EIS is unclear about whether additional discharges from LF cleaning will be necessary and recommends including information on the permitted discharges for all missile areas.	The following text has been added to Section 3.13.1.2.2 in the Final Sentinel EIS: Construction at the LFs is not expected to result in wastewater discharges. However, ground disturbance at each site would be greater than 1 acre, so an NPDES stormwater discharge permit would be required for each site.
WR-2	F-4	Commenter suggests the second sentence in the first paragraph be modified to clarify the multiple U.S. Army Corps of Engineers (USACE) roles for the Proposed Action.	The second sentence of Section A.5.1 of Appendix A of the Final Sentinel EIS has been revised as suggested.
WR-3	F-4	Commenter states that Appendix A discusses access to and activities on "USACE-administered land," that the project will require permits for ROW easements on USACE-administered land, and that other USACE-related activities will occur and provides additional detail on such USACE activities.	Section A.5.2 of Appendix A of the Final Sentinel EIS has been revised to integrate text from this comment into the discussion of U.S. Army Corps of Engineers (USACE) activities and regulatory requirements.
WR-4	F-4	Commenter suggests reordering the paragraphs in Appendix A Section A.5.2 and clearly defining each of the USACE roles and responsibilities.	Section A.5.2 of Appendix A of the Final Sentinel EIS has been reorganized as suggested so Clean Water Act (CWA) Section 408 is discussed before regulatory authorities (CWA Section 404 or Section 10 of the Rivers and Harbors Act of 1899) and permitting mechanisms.
WR-5	F-4	Commenter states that, contrary to what the Draft EIS states, aquatic resource delineations have not been completed and Section 10/404 permitting has not occurred; therefore, the ROD cannot reflect the agencies' full consideration of impacts on water of the United States (WOTUS). Commenter provides information on what would have to occur to achieve full consideration of impacts on WOTUS.	Section A.5.2 of Appendix A of the Final Sentinel EIS has been revised to remove the statement that the ROD will reflect the agency's full consideration of impacts and to add the last three sentences of this comment.

Comment Response Code	Commenter ID	Comment summary	Response
WR-6	I-8	Commenter questions what happens when water and tree roots are hit.	As outlined in Section 2.1.6.3 of the Final Sentinel EIS, the Proposed Action includes a suite of utility installation, topsoil preservation, and wetland and waterbody preparation techniques to account for land use, terrain, streamflow conditions, subsurface conditions, and sensitive resources that might need to be traversed or avoided (see Table 2.1-4). These conditions, specifically subsurface conditions, including the presence of water or root structures, would be assessed on a case-by-case basis to determine the installation approach to be implemented. Sections 3.3 and 3.15 describe the nature and overall level of effects of the installation of utilities on both biological and water resources.
WR-7	I-10	Commenter expresses concern about Mouse (Souris) River flooding along U.S. Highway 52.	Installation of the proposed utility corridors is described in Section 2.1.6.3 of the Final Sentinel EIS. Effects of installing the utility corridors on floodplains are outlined in sections 3.15.1.2.2, 3.15.2.2.2, and 3.15.3.2.2. The Proposed Action includes a suite of utility installation, topsoil preservation, and wetland and waterbody preparation techniques to account for land use, terrain, streamflow conditions, subsurface conditions, and sensitive resources that might need to be traversed or avoided (see Table 2.1-4). The preparation and installation methods used at wetland and waterbody crossings would be implemented on a case-by-case basis in coordination with USACE. Upon completion of the corridors, disturbed areas would be reseeded and topographically restored, as appropriate. It is not anticipated the Proposed Action would change (neither increase nor decrease) the surface water or stormwater flow rates or collection in the identified area, and this information has been forwarded to the prime contractor to inform the design for that area. In addition, it is not anticipated that any real estate transaction associated with the Proposed Action would alter easements or ROWs granted to the City of Sawyer.
WR-8	I-10	Commenter expresses concern about a flowage and ponding easement the City of Sawyer has on their private property.	See response to Comment WR-7.
WR-9	I-10	Commenter expresses concern about natural springs on their property and the risk of their destruction from trenching.	The comment is consistent with the environmental consequences associated with water resources addressed in Section 3.15 of the Final Sentinel EIS. Wetland delineations would be conducted before construction activities began, and the utility installation method and exact location of the utility corridor would be chosen on a case-by-case basis as determined by local conditions to minimize or eliminate any adverse effects on wetlands. The Air Force and any contractors would coordinate with local authorities to comply with local, state, and federal regulations regarding wetlands and surface water and implement all mitigation measures associated with water resources outlined in Section 6.0 of the EIS. This comment has been forwarded to the prime contractor for informational purposes before fieldwork begins.

Comment Response Code	Commenter ID	Comment summary	Response
WR-10	I-19	Commenter expresses concern about groundwater and how it will be protected.	The affected environment and environmental consequences associated with water resources are addressed in Section 3.15 of the Final Sentinel EIS. The Proposed Action and the Reduced Utility Corridors Alternative would have short- and long-term less-than-significant adverse effects on water resources. Those effects would result from activities at F.E. Warren, Malmstrom, Minot, and Hill AFBs; Camp Guernsey; and UTTR. The Proposed Action and the Reduced Utility Corridors Alternative, however, would not (1) cause an exceedance of a total maximum daily load (TMDL); (2) cause a detrimental change in the impairment status of a surface water; (3) result in an unpermitted direct effect on a water of the United States (WOTUS); (4) cause erosion and sedimentation that would violate water quality laws or the terms of a National Pollutant Discharge Elimination System (NPDES) permit; or (5) contribute to a violation of any local, state, or federal regulation. Table 3.15-8 in the Final EIS outlines both the mitigation measures required under existing plans, regulations, and guidelines and project-specific measures the Air Force is recommending to the decision maker to reduce or eliminate adverse effects of the Proposed Action or the Reduced Utility Corridors Alternative on water resources. This list is not all-inclusive; the Air Force and its contractors would comply with all applicable regulations related to water resources. In addition, the Air Force would implement on other federally managed properties all mitigation measures required by cooperating agencies, as outlined in Appendix A of the Final EIS. Section 6.0 of the EIS provides details on each of the mitigation measures, including to which phase of the project and to which lands it would apply.
WR-11	I-22	Commenter states that roads and utility corridors will cross active floodplains and that related mitigation is adequately discussed in the EIS.	The comment is consistent with Section 3.15, Water Resources, in the Final Sentinel EIS.
WR-12	I-22	Commenter states the EIS mentions water being trucked in for construction purposes but without details of where that water will be trucked from but does not mention quantities or permitting. Commenter states that Wyoming requires a permit for any temporary water hauls.	The following mitigation measure has been added to Section 6.0 of the Final Sentinel EIS to be recommended to the decision maker: WATER – 10: Applicable permits will be obtained for any water withdrawals or temporary water hauls that may be required for construction of the Project.

Comment Response Code	Commenter ID	Comment summary	Response
WR-13	I-22	Commenter states that in Wyoming, surface waters and groundwater are classified as Waters of the State and that the EIS should emphasize that.	Language has been edited in Section 3.15.1.2 of the Final Sentinel EIS to make this clarification: Surface and groundwater in Wyoming are classified as Waters of the State. Groundwater is further classified either as waters known to be sources of supply that have appropriated uses identified in Wyoming statutes or as unappropriated waters.
WR-14	I-22	Commenter provides language from Wyo. Stat. § 41-3-308 (d) and recommends that the EIS discuss the involvement of the Wyoming State Engineer's Office Safety of Dams (SOD) Division.	The following language has been added to Section 3.15.1.2, Water Resources, in the Final Sentinel EIS: Additionally, Wyo. Stat. § 41-3-308 (d) states that the state engineer shall provide for the regulation and supervision of all dams, diversion systems, and reservoirs by the state to the extent required to protect the public safety and property. The state engineer is authorized and directed to promulgate regulations and standards for the design, construction, enlargement, alteration, abandonment, maintenance, monitoring, operation, repair, and removal of dams, reservoirs, and diversion systems as are necessary and proper to carry out the purposes of the statute.
WR-15	L-1	Commenter states that work done in floodplains in Teton County requires appropriate permits.	The affected environment and environmental consequences associated with water resources are addressed in Section 3.15 of the Final Sentinel EIS. It is understood that any work being done within the floodplain in Teton County would require appropriate permits. The Air Force and its prime contractor would coordinate with Teton County to acquire all necessary permits.
WR-16	S-3	Commenter states that precautions must be taken to protect state water resources and mentions several precautionary measures.	The affected environment and environmental consequences associated with water resources are addressed in Section 3.15 of the Final Sentinel EIS. The Air Force and its contractors will continue to coordinate with and meet all requirements of the NDDEQ. Licensing, permitting, and other requirements outlined in the comment have been added to the list of mitigation measures in Section 6.0 of the Final EIS to be recommended to the decision maker: 1. WATER – 2: Minimize adverse effects on a waterbody during construction activity, including minimizing disturbance of stream beds and banks to prevent excess siltation and replacing and revegetating any disturbed area as soon as feasible after work has been completed. Stream banks would be reseeded with a mix of native grasses and forbs appropriate for the area, and the use of invasive or exotic vegetative species would be avoided. Also see the “Biological Resources” mitigation measures for additional measures related to restoration and reseeding.

Comment Response Code	Commenter ID	Comment summary	Response
			2. WATER – 5: Prevent spills of oil and grease during equipment maintenance or handling of fuels on the sites, which could potentially reach receiving waters. Also see the "Hazardous Materials and Waste" (HAZMAT) mitigation measures for additional measures related to the requirements for proposed handling, storage, and disposal of hazardous materials.
WR-17	S-3	Commenter states that projects that disturb one or more acres are required to have a stormwater runoff discharge permit and notes where further information can be found.	The affected environment and environmental consequences associated with water resources are addressed in Section 3.15 of the Final Sentinel EIS. The Air Force and its contractors will continue to coordinate with and meet all requirements of the NDDEQ, and it is understood the permitting and other requirements outlined in the comment may become necessary with the implementation of the Proposed Action.
WR-18	S-3	Commenter states that projects that disturb one or more acres are required to have a stormwater runoff discharge permit and notes where further information can be found.	The affected environment and environmental consequences associated with water resources are addressed in Section 3.15 of the Final Sentinel EIS. The Air Force and its contractors will continue to coordinate with and meet all requirements of the NDDEQ, and it is understood the requirements outlined in the comment may become necessary with the implementation of the Proposed Action.
WR-19	S-3	Commenter states that a USACE water quality certification could be required if the project is subject to Section 404 permitting.	The affected environment and environmental consequences associated with water resources are addressed in Section 3.15 of the Final Sentinel EIS. The Air Force and its contractors will continue to coordinate with and meet all requirements of the NDDEQ. Coordination with USACE and the states through the CWA sections 404 and 401 permitting processes also is addressed in the list of recommended mitigation measures in Section 6.0 of the Final EIS.
WR-22	S-5	Commenter states that construction or construction modifications of dams, ponds, or other devices that retain water in North Dakota might require a construction permit.	The comment is consistent with Section 3.15.3.2 of the Final Sentinel EIS. The Air Force and its contractors would continue to coordinate with the North Dakota Department of Water Resources to obtain construction permits as required; specifically, for any new construction of or modifications to dams, ponds, or other devices that retain water.
WR-23	S-5	Commenter states that, if an observation well encountered during project activities must be removed, the Water Appropriation Division must be contacted.	The Air Force and any contractors would contact the North Dakota Water Appropriation Division if an observation well is encountered during project activities. The Air Force will site around any observation well encountered during project activities wherever feasible and, otherwise, contact the Water Appropriation Division to ensure the well is properly abandoned.

Comment Response Code	Commenter ID	Comment summary	Response
WR-25	S-5	Commenter states that projects occurring below the ordinary high water mark (OHWM) of a navigable stream require authorization in the form of a sovereign land permit.	The comment is consistent with Section 3.15, Water Resources, specifically 3.15.3.2, in the Final Sentinel EIS. The Air Force and its contractors would continue to coordinate with the North Dakota Department of Water Resources to obtain construction permits as required; specifically, a sovereign land permit for any project occurring at least partially below the OHWM of a navigable stream.
WR-26	S-6	Commenter states that the process for water rights and water rights changes take time.	The Air Force understands the commenter's concern about water rights and will remain cognizant of the time required to process water rights changes. This information has been passed along to the prime contractor for informational purposes.
WR-27	S-9	Commenter states the proposed project might affect jurisdictional dams, floodplain management, registered groundwater wells, stream gages, and surface water rights. Commenter suggests measures to minimize adverse impacts.	The following mitigation measure has been added to those listed in Section 6.0 of the Final Sentinel EIS to be recommended to the decision maker: WATER – 11: Avoid conducting work within dam embankments or their appurtenances and making changes that could have a measurable effect on the reservoir storage areas. Should any work need to be completed within these areas, construction plans will be submitted to the applicable state and federal agencies for review and approval before construction in these areas can begin.
WR-28	S-9	Commenter states Banner and Kimball counties, NE, have no floodplain mapping. Because of this, preventive actions should be taken to minimize flood hazards and losses.	The following mitigation measure has been added to those listed in Section 6.0 of the Final Sentinel EIS for consideration by the decision maker: WATER – 12: Comply with all local, state, and federal floodplain regulations when conducting work within a regulated floodplain and/or floodway, and obtain a floodplain development permit if needed.
WR-29	S-9	Commenter states that public supply wells should be located and avoided, and, if the registration status, use, or ownership of a well changes because of the project, the appropriate forms must be filed with NE Department of Natural Resources (DNR).	The following mitigation measure has been added to those listed in Section 6.0 of the Final Sentinel EIS to be recommended to the decision maker: WATER – 13: Locate and avoid Project-related disturbances to all public supply and registered wells. If the registration status, use, or ownership of a well changes due to the Project, a Water Well Registration Modification Form and/or the Change of Ownership Form will be filed with the applicable state's Department of Natural Resources (DNR) office. Any new wells developed as part of the Project, if needed, will also be registered with the applicable state's DNR office.

Comment Response Code	Commenter ID	Comment summary	Response
WR-30	S-9	Commenter states if construction activities include groundwater use, then the Air Force might need to file for permits with NeDNR and the local Natural Resources District.	The following mitigation measure has been added to those listed in Section 6.0 of the Final Sentinel EIS to be recommended to the decision maker: WATER – 14: If a transfer of groundwater use/rights is required for the Project, file the transfer request with the applicable state's Department of Natural Resources (DNR) office and/or the local Natural Resources District (NRD). Also work with these agencies to discuss any additional permitting requirements that may be applicable/necessary related to the transfer, as needed.
WR-31	S-9	Commenter states that there are several surface water appropriations located near proposed project sites, provides a figure of the general locations, and provides URLs for more detailed information.	The following mitigation measure has been added to those listed in Section 6.0 of the Final Sentinel EIS to be recommended to the decision maker: WATER – 15: If surface water rights are permanently modified as a result of the Project, provide the appropriate modification requests to the applicable state's Department of Natural Resources (DNR) for review and approval.
WR-36	T-1	Commenter questions why the project cannot find a way so as not to affect waters.	The affected environment and environmental consequences associated with water resources are addressed in Section 3.15 of the Final Sentinel EIS. The Proposed Action and the Reduced Utility Corridors Alternative would have short- and long-term less-than-significant adverse effects on water resources. Those effects would result from activities at F.E. Warren, Malmstrom, Minot, and Hill AFBs; Camp Guernsey; and UTTR. The Proposed Action and the Reduced Utility Corridors Alternative, however, would not (1) cause an exceedance of a TMDL; (2) cause a detrimental change in the impairment status of a surface water; (3) result in an unpermitted direct effect on a WOTUS; (4) cause erosion and sedimentation that would violate water quality laws or the terms of an NPDES permit; or (5) contribute to a violation of any local, state, or federal regulation. Table 3.15-8 in the Final EIS outlines both the mitigation measures required under existing plans, regulations, and guidelines and project-specific measures the Air Force is recommending to the decision maker to reduce or eliminate adverse effects of the Proposed Action or the Reduced Utility Corridors Alternative associated with water resources. This list is not all-inclusive; the Air Force and its contractors would comply with all applicable regulations related to water resources. In addition, the Air Force would implement on other federally managed properties all mitigation measures required by cooperating agencies, as outlined in Appendix A of the EIS. Section 6.0 of the EIS provides details on each of the mitigation measures, including to which phase of the Project and to which lands it would apply.

NATIONAL SECURITY POLICIES

Comment Response Code	Commenter ID	Comment summary	Response
NS-9	N-4	Commenter states the EIS ignores the long-term effects of nuclear testing and development of more nuclear weapons. Commenter mentions several impacts of nuclear weapon development. Commenter states the United States should lead toward ending nuclear weapons development and stockpiling and not create more victims of nuclear weapons.	The Proposed Action does not include increasing or decreasing the number of land-based ICBMs; the testing of nuclear weapons; or the mining, manufacturing, producing, or disposing of any nuclear material or waste. The Proposed Action is fundamentally intended to refurbish aging missiles and facilities, primarily to provide a safe, secure, and effective deterrent to war. In 1996, the President signed the Comprehensive Test Ban Treaty, which bans all nuclear explosions for civilian or military purposes, but the Senate has never ratified it. Nonetheless, the United States has observed a moratorium on nuclear testing since 1992. The policy of the United States is not to resume nuclear explosive testing unless necessary to ensure the safety and effectiveness of the U.S. nuclear arsenal. There is nothing in the Proposed Action that requires or assumes the United States would resume nuclear explosive testing, and it is consistent with the existing moratorium. The Nuclear Non-Proliferation Treaty (NPT) was ratified by the Senate in 1969 and officially entered into force as a treaty of the United States in 1970. Today, the United States continues to view the NPT as the cornerstone of the nuclear non-proliferation regime. Article VI of the NPT obligates the parties: ...to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control. The United States takes this obligation seriously, and the President has emphasized the long-term goal of eliminating nuclear weapons. The NPT does not provide a time frame for achieving the ultimate goal of nuclear disarmament, nor does it preclude the ongoing maintenance of nuclear weapons. The Proposed Action for which this EIS has been developed would enable the Air Force to maintain the safety of the U.S. ICBM force until the ultimate goal of the NPT has been attained. It is understood that detonating nuclear weapons and nuclear war would pose grave implications for human survival, the environment, socioeconomic development, the global economy, food security, and the health of current and future generations. The United States has led the way toward ending the development and stockpiling of nuclear weapons. Since the peak of the Cold War in 1968 and the signing of the NPT in 1970, the United States has initiated, negotiated, signed, and executed eight Nuclear Arms Reduction Treaties, most recently the New Strategic Arms Reduction Treaty (START) in 2010 and its extension in 2021 under the current administration.

Comment Response Code	Commenter ID	Comment summary	Response
			Through these efforts, the U.S. nuclear stockpile has decreased 88 percent from its peak of 31,255 warheads in 1967 to 3,750 in 2020. The New START, when completely executed, will reduce the stockpile to 1,550. With respect to the Proposed Action, it is critical to remember that the primary purpose is deterrence of war above all else, as the United States maintains a safe, secure, and effective nuclear deterrent that protects the homeland, reassures allies, and deters adversaries until nuclear weapons can be eliminated from the world. Reducing nuclear arms in the modern world has been an ongoing effort, moderated with tension among other global nuclear powers. As led by the United States, nuclear arms reductions have, over time, reduced the methods and mechanisms, while waiting for elimination of the causes and occasions for war.

NEPA PROCESS

Comment Response Code	Commenter ID	Comment summary	Response
NP-1	I-19	Commenter states it would be helpful to have more opportunities to hear about the project and to have project officials meet with tribal elders and members.	The public outreach process is described in Section 1.8 of the Final Sentinel EIS. The Air Force published the Notice of Intent for this EIS in the *Federal Register* on September 25, 2020; advertisements were printed in 13 newspapers; and a press release was provided to local media outlets. The Air Force mailed more than 800 notification letters to federal, state, tribal, and local agencies; cooperating agencies; elected officials; nongovernmental organizations; and interested individuals and more than 10,000 letters to landowners whose property might be affected. In addition, the Air Force developed a project website and conducted 13 virtual scoping meetings via teleconference for 60 Tribes. Letter invitations to participate in the meetings were sent in July 2020, including copies of the meeting presentation, a package of project fact sheets, and an EIS scoping comment form. During each tribal scoping meeting, the Air Force introduced the government organizations involved in the project, described the Proposed Action, described the NEPA process, and provided opportunities for tribal representatives to ask questions and voice comments on the project and the EIS development process. This public outreach process was duplicated for the Draft Sentinel (GBSD) EIS hearings, and additional efforts, including radio advertisements and social media outreach, were conducted. In addition to public outreach associated with the EIS, the Air Force is conducting consultations in compliance with the NHPA Section 106 with the THPO for the Three Affiliated Tribes of Fort Berthold Reservation, ND and with Tribes with traditional cultural affiliation to lands included in the Proposed Action. This effort included in-person and virtual public meetings and a dedicated effort to provide and receive information from Tribes. The Air Force will continue to coordinate with the project stakeholders, including the members of the Three Affiliated Tribes of Fort Berthold Reservation, ND.

GENERAL SUPPORT OR OPPOSITION

Comment Response Code	Commenter ID	Comment summary	Response
SO-7	I-18	Commenter states they hope the Air Force will do their best and use their best judgment to protect the environment, including from nuclear waste and considering climate change.	Air quality, including climate change, is addressed in Section 3.1 of the Final Sentinel EIS. The Proposed Action would have short- and long-term less-than-significant adverse effects on air quality. It also would have long-term less-than-significant beneficial effects on the air quality because of a long-term reduction in the amount of air emissions from operations and maintenance activities in the missile fields, including greenhouse gases. The Proposed Action does not include the generation or disposal of nuclear material (including nuclear waste), and the number of land-based nuclear missiles would remain unchanged.
SO-8	I-23	Commenter states they have a launch facility on their land, and they would prefer no facility expansion on their land. Commenter states the land has legacy coal mines, which if disturbed could create environmental issues. Commenter supports the No Action Alternative.	The commenter's support of the No Action Alternative is noted. Other than the proposed communication towers, the Proposed Action does not include establishment of any off-base above-grade infrastructure outside of existing property boundaries associated with the existing MAFs and LFs. Although no permanent structure would be permitted in the proposed utility easements, they should not interfere with agricultural activities. Site selection guidelines for the installation of the utility corridors are outlined in Section 2.1.6.3 of the Final Sentinel EIS, which include the following: • Utility corridors would be located within or along existing utility easements and corridors wherever possible. • Utility corridors located along existing roadways would be sited in accordance with state and county DOT requirements and sound engineering practice. • Utility corridors located along existing roadways would be sited as close to the roads as possible without undermining their structural integrity. • Utility corridors not able to be located along existing roadways would be sited along the most practicable path to minimize effects on public and private property and sensitive resources in the area. • If sensitive resources are identified near potential sites, the Air Force would consider actions to avoid or minimize adverse effects to the maximum extent practicable.

Comment Response Code	Commenter ID	Comment summary	Response
			At this time, it is expected that the utility corridors would be installed adjacent to the roadway in the area identified in the comment. Consistent with the comment and as outlined in the Final EIS, ground disturbance is expected in the temporary construction easement during installation. Upon completion of work in the corridors, disturbed areas would be reseeded and topographically restored, as appropriate. It is not anticipated that the Proposed Action would change (neither increase nor decrease) the surface water or stormwater flow rates or collection in the area identified. Based on the selection criteria above, it is not anticipated at this time that any legacy coal mines would be disturbed by the Proposed Action. There is a myriad of small-scale siting avoidance and design options the Air Force is proposing to ultimately employ while constructing the network of Sentinel utility corridors. Measures such as deviating, or "boxing around," or directionally drilling under sensitive resources represent microsite alternatives that would ultimately be employed as part of the Proposed Action to limit its impacts. These measures accommodating utility corridor adjustments are part of the Proposed Action and have been factored into the EIS and considered within the environmental consequences analysis.
SO-18	N-5	Commenter expresses support for the project.	The commenter's support of the Proposed Action will be added to the public record.

CUMULATIVE EFFECTS

Comment Response Code	Commenter ID	Comment summary	Response
CE-1	I-25	Commenter mentions EIS language about wind energy development. Commenter states a 2-nautical mile (-NM) easement around each MAF and LF equates to 1,173,150 acres and that restricting use of that amount of land could have significant economic impacts that should be evaluated in the EIS, to include a discussion of mitigation.	As outlined in Section 4.2.2 of the Final Sentinel EIS, wind energy development projects, including establishing 2-NM setbacks, are completely independent of the Sentinel Project and would proceed with or without it being implemented. However, the Air Force Global Strike Command and energy stakeholders share a concern about the potential for encroachment hazards from wind turbines placed in the missile fields. DoD supports renewable energy when it is compatible with the DoD mission to test, train, and operate. The Air Force is a member of the DoD Military Aviation and Installation Assurance Siting Clearinghouse (codified in 2017 as Title 10 of the *United States Code* § 183a), which provides a process through which potential impacts of wind farm projects can be evaluated and mitigation options can be explored while preserving the DoD mission through collaboration with internal and external stakeholders. The clearinghouse works with industry to overcome risks to national security while promoting compatible domestic energy development. In accordance with the clearinghouse process, DoD must evaluate each siting proposal and meet with wind farm project developers to try to find feasible and affordable mitigation measures before objecting to a project.

MITIGATION

Comment Response Code	Commenter ID	Comment summary	Response
MI-2	N-16	Commenter states the ongoing severe drought should be considered in mitigation measures, particularly for biological resources, geology and soils, and land use.	The recommended mitigation measures in Section 6.0 of the Final Sentinel EIS include considerations for drought and water conservation, including revegetation with native vegetation, and weed control measures that do not use excessive amounts of water.

Page intentionally left blank.

B.2 NOTICE OF INTENT

Page intentionally left blank.

Frequency: Once per user per project.

Affected Public: Business or other for-profit; not-for-profit institutions; individuals.

Total Estimated Number of Annual Number of Respondents: 100.

Estimated Time Per Respondent: 1.5 hours.

Total Estimated Number of Annual Burden Hours: 150 hours.

Abstract: The DFC Serbia-Kosovo Investment Portal will be the principal document used by DFC to screen the viability of potential of projects for DFC financing as part of the implementation of the Serbia-Kosovo Economic Normalization Agreement.

Nichole Skoyles,

Administrative Counsel, Office of the General Counsel.

[FR Doc. 2020–21157 Filed 9–24–20; 8:45 am]

BILLING CODE 3210–02–P

DEPARTMENT OF DEFENSE

Department of the Air Force

Notice of Intent To Prepare an Environmental Impact Statement for the Ground Based Strategic Deterrent Deployment and Minuteman III Decommissioning and Disposal

AGENCY: Department of the Air Force, Department of Defense.

ACTION: Notice of intent.

SUMMARY: The United States Air Force (Air Force) is issuing this Notice of Intent (NOI) to advise the public of its intent to prepare an Environmental Impact Statement (EIS) to evaluate potential impacts on the human and natural environments of deploying the Ground Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) system and decommissioning and disposing of the Minuteman III ICBM system. The Air Force invites public participation in the scoping process to determine the scope and significant issues to be analyzed in depth in the EIS and eliminate issues which are not significant.

DATES: A public scoping period of 45-days will take place starting from the date of this NOI publication in the **Federal Register**. Comments will be accepted at any time during the environmental impact analysis process; however, to ensure the Air Force has sufficient time to consider public scoping comments during preparation of the Draft EIS, please submit comments within the 45-days scoping period. Major milestone dates for the GBSD EIS are as follows:

- Draft EIS and Notice of Availability (NOA) Publication, Spring 2022
- Draft EIS Public Comment Period and Hearing, Spring 2022
- Final EIS and NOA Publication, Spring 2023
- Final ROD signature, Spring 2023

Given the complexity and the scope of this proposal, the Air Force anticipates the environmental analysis to extend past two years for completion and has received senior agency official approval.

ADDRESSES: For GBSD deployment EIS inquiries or requests for printed or digital copies of the scoping materials, please contact Capt Christina Camp, phone: (318) 456–6519, or request materials by email: *AFGSC.GBSD.ImpactStudy@us.af.mil.* The public and interested parties can submit their comments through the project website at *www.gbsdeis.com;* or mail comments to AFCEC/CZN, Attn: GBSD Project EIS, 2261 Hughes Avenue, Suite 155, JBSA Lackland TX 78236–9853; FedEx and UPS deliveries to AFCEC/CZN, Attn: GBSD Project EIS; 3515 S General McMullen, San Antonio, TX 78226–9853.

SUPPLEMENTARY INFORMATION: The purpose of the proposed action is to replace all ground based Minuteman III weapons systems within the continental United States with the GBSD system. The proposed action is needed to meet national security requirements and to comply with the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115–232 § 1663, 132 Stat. 2153), which directs the Air Force to develop and implement a strategy ''to accelerate the development, procurement, and fielding of the ground-based strategic deterrent program.'' The scope of the deployment activities would include replacing all ground based Minuteman III ICBMs in the United States, including motors, interstages, and missile guidance sets, with the GBSD weapon system, a technologically advanced ICBM system. All launch facilities, communication systems, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system.

The Secretary of the Air Force announced that the GBSD deployment will take place at three sequenced Operational Locations 1–3 (''Ops 1–3''), with the scope of each Ops location occurring both on-base and in the associated missile fields. The Ops locations are the alternatives being consider in the EIS. Each location is the preferred alternative for its respective sequenced order, and includes Francis E. Warren Air Force Base (AFB) WY (Ops-1); Malmstrom AFB, MT (Ops-2); and Minot AFB, ND (Ops-3). The additional maintenance, training, storage, testing, support, decommissioning, and disposal actions would occur at Hill AFB, UT; the Utah Test and Training Range (UTTR), UT; Camp Guernsey, WY; and Camp Navajo, AZ.

The EIS may consider alternatives that include deploying the GBSD system in phases. The Proposed Action would not include generating or disposing of nuclear material, and the number of ground based nuclear missiles would remain unchanged. Deployment of the GBSD system would begin in the mid-2020s, extending the capabilities of the ground-based leg of the U.S. nuclear triad through at least 2075.

The EIS will analyze facility construction, modification, and operations at and around Francis E. Warren AFB and Camp Guernsey, Malmstrom AFB, Minot AFB, Hill AFB and UTTR, and Camp Navajo. During the transition from Minuteman III to GBSD, the two weapon systems would be partially operated and maintained concurrently for several years; therefore, the EIS also will analyze the overlapping actions and resulting impacts of conducting aspects of the programs in parallel. The EIS will also analyze the No Action Alternative which will also be fully considered. It serves as the baseline against which to compare the Proposed Action. Under the No Action Alternative, the Air Force would continue to maintain and operate the Minuteman III weapon system in its current configuration and the GBSD system would not be deployed. Expected environmental impacts are assumed to result from ground disturbing activities associated with construction of the GBSD system. It is anticipated that these environmental impacts, will be mitigated to the extent practical or avoided where possible. Further, the Air Force will pursue all required Federal and State permits, licenses, and other authorizations during the course of this EIS process, including but not limited to consultations under the National Historic Preservation Act of 1966 (54 U.S.C. 300101 *et seq.*) and the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*), as well as permits under the Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq).

The scoping process allows and invites early and meaningful participation by the public and is used to define the full range of issues and concerns to be evaluated in the EIS. As such, the Air Force is soliciting scoping comments and/or identification of

potential alternatives, information, and analysis relevant to the proposed action from interested local, state, and federal agencies and organizations; Native American Tribes; and members of the public. Concurrently, public scoping notices will be announced locally within the proposed actions region of influence. Due to public health concerns related to COVID–19, the Air Force will not hold face-to-face public scoping meetings. Public scoping will be accomplished remotely via the project website that includes materials on the project website at *www.gbsdeis.com.* The website provides posters, slides, other meeting materials, and a capability to provide public scoping comments. To make alternative arrangements to receive printed or digital copies of the scoping materials, please contact Capt Christina Camp at (318) 456–6519, or by email: *AFGSC.GBSD.ImpactStudy@us.af.mil.*

Adriane Paris,

Acting Air Force Federal Register Liaison Officer.

[FR Doc. 2020–21220 Filed 9–24–20; 8:45 am]

BILLING CODE 5001–10–P

DEPARTMENT OF EDUCATION

[Docket No. ED–2020–SCC–0072]

Agency Information Collection Activities; Submission to the Office of Management and Budget for Review and Approval; Comment Request; Recipient's Funding Certification and Agreement CARES Act

AGENCY: Office of General Counsel, Department of Education (ED).

ACTION: Notice.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995, ED is proposing an extension without change of a currently approved collection.

DATES: Interested persons are invited to submit comments on or before October 26, 2020.

ADDRESSES: Written comments and recommendations for proposed information collection requests should be sent within 30 days of publication of this notice to *www.reginfo.gov/public/do/PRAMain.* Find this particular information collection request by selecting ''Department of Education'' under ''Currently Under Review,'' then check ''Only Show ICR for Public Comment'' checkbox.

FOR FURTHER INFORMATION CONTACT: For specific questions related to collection activities, please contact Jack Cox, 202–453–6314.

SUPPLEMENTARY INFORMATION: The Department of Education (ED), in accordance with the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3506(c)(2)(A)), provides the general public and Federal agencies with an opportunity to comment on proposed, revised, and continuing collections of information. This helps the Department assess the impact of its information collection requirements and minimize the public's reporting burden. It also helps the public understand the Department's information collection requirements and provide the requested data in the desired format. ED is soliciting comments on the proposed information collection request (ICR) that is described below. The Department of Education is especially interested in public comment addressing the following issues: (1) Is this collection necessary to the proper functions of the Department; (2) will this information be processed and used in a timely manner; (3) is the estimate of burden accurate; (4) how might the Department enhance the quality, utility, and clarity of the information to be collected; and (5) how might the Department minimize the burden of this collection on the respondents, including through the use of information technology. Please note that written comments received in response to this notice will be considered public records.

Title of Collection: Recipient's Funding Certification and Agreement CARES Act.

OMB Control Number: 1801–0005.

Type of Review: An extension without change of a currently approved collection.

Respondents/Affected Public: Private Sector; State, Local, and Tribal Governments.

Total Estimated Number of Annual Responses: 34,230.

Total Estimated Number of Annual Burden Hours: 17,115.

Abstract: The Department of Education (the Department) is requesting clearance to allow for immediate outreach to institutions of higher educations (IHEs) to meet the requirements of the CARES Act. Section 18004(a)(1) of the CARES Act, Public Law 116–136 (March 27, 2020), authorizes the Secretary of Education (''Secretary'') to allocate formula grant funds to participating institutions of higher educations (IHEs). Section 18004(c) of the CARES Act requires the IHEs to use no less than fifty percent of the funds received to provide emergency financial aid grants to students for expenses related to the disruption of campus operations due to coronavirus (including eligible expenses under a student's cost of attendance such as food, housing, course materials, technology, health care, and child care).

Dated: September 22, 2020.

Kate Mullan,

PRA Coordinator, Strategic Collections and Clearance, Governance and Strategy Division, Office of Chief Data Officer, Office of Planning, Evaluation and Policy Development.

[FR Doc. 2020–21187 Filed 9–24–20; 8:45 am]

BILLING CODE 4000–01–P

DEPARTMENT OF EDUCATION

[Docket No.: ED–2020–SCC–0082]

Agency Information Collection Activities; Submission to the Office of Management and Budget for Review and Approval; Comment Request

AGENCY: Office of Postsecondary Education, Department of Education (ED).

ACTION: Notice.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995, ED is proposing an extension without change of a currently approved collection.

DATES: Interested persons are invited to submit comments on or before October 26, 2020.

ADDRESSES: Written comments and recommendations for proposed information collection requests should be sent within 30 days of publication of this notice to *www.reginfo.gov/public/do/PRAMain.* Find this particular information collection request by selecting ''Department of Education'' under ''Currently Under Review,'' then check ''Only Show ICR for Public Comment'' checkbox.

FOR FURTHER INFORMATION CONTACT: For specific questions related to collection activities, please contact Gaby Watts, 202–453–7195.

SUPPLEMENTARY INFORMATION: The Department of Education (ED), in accordance with the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3506(c)(2)(A)), provides the general public and Federal agencies with an opportunity to comment on proposed, revised, and continuing collections of information. This helps the Department assess the impact of its information collection requirements and minimize the public's reporting burden. It also helps the public understand the Department's information collection requirements and provide the requested data in the desired format. ED is soliciting comments on the proposed information collection request (ICR) that is described below. The Department of

B.3 COOPERATING AGENCY LETTERS

Page intentionally left blank.

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC
OFFICE OF THE ASSISTANT SECRETARY

SAF/IEI
1665 Air Force Pentagon
Washington, DC 20330-1665

Dr. BJ Howerton
Branch Chief
Environmental and Cultural Resources Management
Office of Trust Services
Bureau of Indian Affairs
1001 Indian School Rd NW
Albuquerque, NM 87104

Dear Dr. Howerton,

As the Lead Agency, the United States Department of the Air Force (DAF) is preparing an environmental impact statement (EIS) for the *Ground Based Strategic Deterrent (GBSD) Deployment and Minuteman III Decommissioning and Disposal*. The EIS will address (1) the deployment of the GBSD intercontinental ballistic missile (ICBM) weapon system and (2) decommissioning and disposal of the Minuteman III ICBM weapon system.

The DAF held an information interagency meeting 25 June 2020 where the details of the GBSD EIS were presented that indicated there will be 40.4 miles of new utility corridors proposed across lands that are administered by the BIA. GBSD deployment will primarily occur at Malmstrom AFB, MT; Francis E. Warren AFB, WY; Minot AFB, ND; and around their associated missile fields. Additional maintenance, training, storage, disposal, and support actions would occur at Camp Navajo, AZ; Hill AFB, UT; Utah Test and Training Range (UTTR), UT; and Camp Guernsey, WY. GBSD program overview and map relevant to your area of responsibility are attached.

The DAF requests that as a Cooperating Agency (CA) in accordance with 40 C.F.R. §1501.8, you participate in the several areas of EIS development associated with your areas of jurisdiction by law or special expertise by:

- Participating in the scoping process;
- Assuming responsibility, upon request, for developing information and preparing environmental analysis, including the portions of the EIS concerning the areas you have jurisdiction or special expertise;
- Making staff support available to enhance interdisciplinary review capability and provide specific comments; and
- Meet the DAF's schedule for providing comments and limit your comments to those matters for which you have jurisdiction or special expertise.

To avoid unnecessary delays, the DAF has developed a schedule (attached) setting milestones for reviews and authorizations for implementation of the proposal. We ask that you provide appropriate information and related materials in a timely fashion and establish timelines for your complete review.

Please acknowledge in writing your acceptance or declination of this request. You may decline to participate as a CA in the EIS, per 40 C.F.R. §1501.8(c). Should you or your staff have questions regarding this letter, our point of contact is Mr. Jack Bush, HQ USAF/A4CI, who can be reached at jack.bush@us.af.mil or (703) 867-1082.

Sincerely,

MORIARTY.ROBERT.E.1013267584

Digitally signed by MORIARTY.ROBERT.E.1013267584
Date: 2020.11.04 17:14:47 -05'00'

ROBERT E. MORIARTY, P.E., SES
Deputy Assistant Secretary of the Air Force
(Installations)

Attachments:
1. GBSD Program Overview
2. GBSD Milestone Schedule
3. Maps of lands associated with the proposed GBSD EIS_Minot

cc:
SAF/AQR/GCN
AF/A30/A4C
HQ AFGSC/A5-8
AFLOA/JOCE

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC
OFFICE OF THE ASSISTANT SECRETARY

SAF/IEI
1665 Air Force Pentagon
Washington, DC 20330-1665

Mr. Andrew R. Tkach
Division of Decision Support, Planning, and NEPA
Bureau of Land Management
20 M Street, SE
Washington, DC 20003

Dear Mr. Tkach,

As the Lead Agency, the United States Department of the Air Force (DAF) is preparing an environmental impact statement (EIS) for the *Ground Based Strategic Deterrent (GBSD) Deployment and Minuteman III Decommissioning and Disposal*. The EIS will address (1) the deployment of the GBSD intercontinental ballistic missile (ICBM) weapon system and (2) decommissioning and disposal of the Minuteman III ICBM weapon system.

The DAF held an information interagency meeting 25 June 2020 where the details of the GBSD EIS were presented that indicated there will be 4.6 miles of new utility corridors proposed across land managed by BLM. GBSD deployment will primarily occur at Malmstrom AFB, MT; Francis E. Warren AFB, WY; Minot AFB, ND; and around their associated missile fields. Additional maintenance, training, storage, disposal, and support actions would occur at Camp Navajo, AZ; Hill AFB, UT; Utah Test and Training Range (UTTR), UT; and Camp Guernsey, WY. GBSD program overview and map relevant to your area of responsibility are attached.

The DAF requests that as a Cooperating Agency (CA) in accordance with 40 C.F.R. §1501.8, you participate in the several areas of EIS development associated with your areas of jurisdiction by law or special expertise by:

- Participating in the scoping process;
- Assuming responsibility, upon request, for developing information and preparing environmental analysis, including the portions of the EIS concerning the areas you have jurisdiction or special expertise;
- Making staff support available to enhance interdisciplinary review capability and provide specific comments; and
- Meet the DAF's schedule for providing comments and limit your comments to those matters for which you have jurisdiction or special expertise.

To avoid unnecessary delays, the DAF has developed a schedule (attached) setting milestones for reviews and authorizations for implementation of the proposal. We ask that you

provide appropriate information and related materials in a timely fashion and establish timelines for your complete review.

Please acknowledge in writing your acceptance or declination of this request. You may decline to participate as a CA in the EIS, per 40 C.F.R. §1501.8(c). Should you or your staff have questions regarding this letter, our point of contact is Mr. Jack Bush, HQ USAF/A4CP, who can be reached at jack.bush@us.af.mil or (703) 867-1082.

Sincerely,

MORIARTY.ROBERT.E.1013267584

Digitally signed by MORIARTY.ROBERT.E.1013267584
Date: 2020.11.04 17:16:07 -05'00'

ROBERT E. MORIARTY, P.E., SES
Deputy Assistant Secretary of the Air Force
(Installations)

Attachments:
1. GBSD Program Overview
2. GBSD Milestone Schedule
3. Maps of lands associated with the proposed GBSD EIS_Malmstrom

cc:
SAF/AQR/GCN
AF/A30/A4C
HQ AFGSC/A5-8
AFLOA/JOCE

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC
OFFICE OF THE ASSISTANT SECRETARY

SAF/IEI
1665 Air Force Pentagon
Washington, DC 20330-1665

Mr. Steve Davies
Area Manager
Bureau of Reclamation Montana Area Office
P.O. Box 30137
Billings, MT 59107-0137

Dear Mr. Davies,

As the Lead Agency, the United States Department of the Air Force (DAF) is preparing an environmental impact statement (EIS) for the *Ground Based Strategic Deterrent (GBSD) Deployment and Minuteman III Decommissioning and Disposal*. The EIS will address (1) the deployment of the GBSD intercontinental ballistic missile (ICBM) weapon system and (2) decommissioning and disposal of the Minuteman III ICBM weapon system.

The DAF held an information interagency meeting 25 June 2020 where the details of the GBSD EIS were presented that indicated that there will be 3.6 miles of new utility corridors proposed across lands managed by Bureau of Reclamation. GBSD deployment will primarily occur at Malmstrom AFB, MT; Francis E. Warren AFB, WY; Minot AFB, ND; and around their associated missile fields. Additional maintenance, training, storage, disposal, and support actions would occur at Camp Navajo, AZ; Hill AFB, UT; Utah Test and Training Range (UTTR), UT; and Camp Guernsey, WY. GBSD program overview and map relevant to your area of responsibility are attached.

The DAF requests that as a Cooperating Agency (CA) in accordance with 40 C.F.R. §1501.8, you participate in the several areas of EIS development associated with your areas of jurisdiction by law or special expertise by:

- Participating in the scoping process;
- Assuming responsibility, upon request, for developing information and preparing environmental analysis, including the portions of the EIS concerning the areas you have jurisdiction or special expertise;
- Making staff support available to enhance interdisciplinary review capability and provide specific comments; and
- Meet the DAF's schedule for providing comments and limit your comments to those matters for which you have jurisdiction or special expertise.

To avoid unnecessary delays, the DAF has developed a schedule (attached) setting milestones for reviews and authorizations for implementation of the proposal. We ask that you

provide appropriate information and related materials in a timely fashion and establish timelines for your complete review.

Please acknowledge in writing your acceptance or declination of this request. You may decline to participate as a CA in the EIS, per 40 C.F.R. § 1501.8(c). Should you or your staff have questions regarding this letter, our point of contact is Mr. Jack Bush, HQ USAF/A4CI, who can be reached at jack.bush@us.af.mil or (703) 867-1082.

Sincerely,

MORIARTY.ROBERT.E.1013267584 Digitally signed by MORIARTY.ROBERT.E.1013267584 Date: 2020.11.04 17:17:20 -05'00'

ROBERT E. MORIARTY, P.E., SES
Deputy Assistant Secretary of the Air Force
(Installations)

Attachments:
1. GBSD Program Overview
2. GBSD Milestone Schedule
3. Maps of lands associated with the proposed GBSD EIS_Malmstrom

cc:
SAF/AQR/GCN
AF/A30/A4C
HQ AFGSC/A5-8
AFLOA/JOCE

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC
OFFICE OF THE ASSISTANT SECRETARY

SAF/IEI
1665 Air Force Pentagon
Washington, DC 20330-1665

Ms. Devetta Hill
Lead Field Project Manager
District Regulatory Office, Omaha District
U.S. Army Corp of Engineers
1616 Capital Ave., Ste. 9000
Omaha, NE 68102

Dear Ms. Hill,

As the Lead Agency, the United States Department of the Air Force (DAF) is preparing an environmental impact statement (EIS) for the *Ground Based Strategic Deterrent (GBSD) Deployment and Minuteman III Decommissioning and Disposal*. The EIS will address (1) the deployment of the GBSD intercontinental ballistic missile (ICBM) weapon system and (2) decommissioning and disposal of the Minuteman III ICBM weapon system.

The DAF held an information interagency meeting 25 June 2020 where the details of the GBSD EIS were presented that indicated there will be 6.9 miles of new utility corridors proposed across lands managed by USACE. GBSD deployment will primarily occur at Malmstrom AFB, MT; Francis E. Warren AFB, WY; Minot AFB, ND; and around their associated missile fields. Additional maintenance, training, storage, disposal, and support actions would occur at Camp Navajo, AZ; Hill AFB, UT; Utah Test and Training Range (UTTR), UT; and Camp Guernsey, WY. GBSD program overview and map relevant to your area of responsibility are attached.

The DAF requests that as a Cooperating Agency (CA) in accordance with 40 C.F.R. §1501.8, you participate in the several areas of EIS development associated with your areas of jurisdiction by law or special expertise by:

- Participating in the scoping process;
- Assuming responsibility, upon request, for developing information and preparing environmental analysis, including the portions of the EIS concerning the areas you have jurisdiction or special expertise;
- Making staff support available to enhance interdisciplinary review capability and provide specific comments; and
- Meet the DAF's schedule for providing comments and limit your comments to those matters for which you have jurisdiction or special expertise.

To avoid unnecessary delays, the DAF has developed a schedule (attached) setting milestones for reviews and authorizations for implementation of the proposal. We ask that you

provide appropriate information and related materials in a timely fashion and establish timelines for your complete review.

Please acknowledge in writing your acceptance or declination of this request. You may decline to participate as a CA in the EIS, per 40 C.F.R. §1501.8(c). Should you or your staff have questions regarding this letter, our point of contact is Mr. Jack Bush, HQ USAF/A4CP, who can be reached at jack.bush@us.af.mil or (703) 867-1082.

Sincerely,

MORIARTY.ROBERT.E.1013267584 Digitally signed by MORIARTY.ROBERT.E.1013267584 Date: 2020.11.04 17:18:32 -05'00'

ROBERT E. MORIARTY, P.E., SES
Deputy Assistant Secretary of the Air Force
(Installations)

Attachments:
1. GBSD Program Overview
2. GBSD Milestone Schedule
3. Maps of lands associated with the proposed GBSD EIS_Minot

cc:
SAF/AQR/GCN
AF/A30/A4C
HQ AFGSC/A5-8
AFLOA/JOCE

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC
OFFICE OF THE ASSISTANT SECRETARY

SAF/IEI
1665 Air Force Pentagon
Washington, DC 20330-1665

Ms. Vicki Christiansen
Chief, Headquarters
U.S. Forest Service
Sidney R. Yates Federal Building
201 14th St SW
Washington, DC 20227

Dear Ms. Christiansen,

As the Lead Agency, the United States Department of the Air Force (DAF) is preparing an environmental impact statement (EIS) for the *Ground Based Strategic Deterrent (GBSD) Deployment and Minuteman III Decommissioning and Disposal*. The EIS will address (1) the deployment of the GBSD intercontinental ballistic missile (ICBM) weapon system and (2) decommissioning and disposal of the Minuteman III ICBM weapon system.

The DAF held an information interagency meeting 25 June 2020 where the details of the GBSD EIS were presented that indicated there will be 19.9 miles of new utility corridors proposed across lands managed by USFS. GBSD deployment will primarily occur at Malmstrom AFB, MT; Francis E. Warren AFB, WY; Minot AFB, ND; and around their associated missile fields. Additional maintenance, training, storage, disposal, and support actions would occur at Camp Navajo, AZ; Hill AFB, UT; Utah Test and Training Range (UTTR), UT; and Camp Guernsey, WY. GBSD program overview and maps relevant to your area of responsibility are attached.

The DAF requests that as a Cooperating Agency (CA) in accordance with 40 C.F.R. §1501.8, you participate in the several areas of EIS development associated with your areas of jurisdiction by law or special expertise by:

- Participating in the scoping process;
- Assuming responsibility, upon request, for developing information and preparing environmental analysis, including the portions of the EIS concerning the areas you have jurisdiction or special expertise;
- Making staff support available to enhance interdisciplinary review capability and provide specific comments; and
- Meet the DAF's schedule for providing comments and limit your comments to those matters for which you have jurisdiction or special expertise.

To avoid unnecessary delays, the DAF has developed a schedule (attached) setting milestones for reviews and authorizations for implementation of the proposal. We ask that you provide appropriate information and related materials in a timely fashion and establish timelines for your complete review.

Please acknowledge in writing your acceptance or declination of this request. You may decline to participate as a CA in the EIS, per 40 C.F.R. §1501.8(c). Should you or your staff have questions regarding this letter, our point of contact is Mr. Jack Bush, HQ USAF/A4CI, who can be reached at jack.bush@us.af.mil or (703) 867-1082.

Sincerely,

MORIARTY.ROBERT.E.1013267584 Digitally signed by MORIARTY.ROBERT.E.1013267584 Date: 2020.11.04 17:08:03 -05'00'

ROBERT E. MORIARTY, P.E., SES
Deputy Assistant Secretary of the Air Force
(Installations)

Attachments:
1. GBSD Program Overview
2. GBSD Milestone Schedule
3. Maps of lands associated with the proposed GBSD EIS_F.E. Warren
4. Maps of lands associated with the proposed GBSD EIS_Malmstrom

cc:
SAF/AQR/GCN
AF/A30/A4C
HQ AFGSC/A5-8
AFLOA/JOCE

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC
OFFICE OF THE ASSISTANT SECRETARY

SAF/IEI
1665 Air Force Pentagon
Washington, DC 20330-1665

Mr. Scott Blackburn
National NEPA Coordinator
U.S. Fish and Wildlife Service
5275 Leesburg Pike
Falls Church, VA 22041-3803

Dear Mr. Blackburn,

As the Lead Agency, the United States Department of the Air Force (DAF) is preparing an environmental impact statement (EIS) for the *Ground Based Strategic Deterrent (GBSD) Deployment and Minuteman III Decommissioning and Disposal*. The EIS will address (1) the deployment of the GBSD intercontinental ballistic missile (ICBM) weapon system and (2) decommissioning and disposal of the Minuteman III ICBM weapon system.

The DAF held an information interagency meeting 25 June 2020 where the details of the GBSD EIS were presented that indicated there will be 11.5 miles of new utility corridors proposed across lands under USFWS management. GBSD deployment will primarily occur on Malmstrom AFB, MT; Francis E. Warren AFB, WY; Minot AFB, ND; and around their associated missile fields. Additional maintenance, training, storage, disposal, and support actions would occur at Camp Navajo, AZ; Hill AFB, UT; Utah Test and Training Range (UTTR), UT; and Camp Guernsey, WY. GBSD program overview and maps relevant to your area of responsibility are attached.

The DAF requests that as a Cooperating Agency (CA) in accordance with 40 C.F.R. §1501.8, you participate in the several areas of EIS development associated with your areas of jurisdiction by law or special expertise by:

- Participating in the scoping process;
- Assuming responsibility, upon request, for developing information and preparing environmental analysis, including the portions of the EIS concerning the areas you have jurisdiction or special expertise;
- Making staff support available to enhance interdisciplinary review capability and provide specific comments; and
- Meet the DAF's schedule for providing comments and limit your comments to those matters for which you have jurisdiction or special expertise.

To avoid unnecessary delays, the DAF has developed a schedule (attached) setting milestones for reviews and authorizations for implementation of the proposal. We ask that you

provide appropriate information and related materials in a timely fashion and establish timelines for your complete review.

Please acknowledge in writing your acceptance or declination of this request. You may decline to participate as a CA in the EIS, per 40 C.F.R. §1501.8(c). Should you or your staff have questions regarding this letter, our point of contact is Mr. Jack Bush, HQ USAF/A4CP, who can be reached at jack.bush@us.af.mil or (703) 867-1082.

Sincerely,

MORIARTY.ROBERT.E.1013267584 Digitally signed by MORIARTY.ROBERT.E.1013267584 Date: 2020.11.04 17:11:12 -05'00'

ROBERT E. MORIARTY, P.E., SES
Deputy Assistant Secretary of the Air Force
(Installations)

Attachments:
1. GBSD Program Overview
2. GBSD Milestone Schedule
3. Maps of lands associated with the proposed GBSD EIS_Malmstrom
4. Maps of lands associated with the proposed GBSD EIS_Minot

cc:
SAF/AQR/GCN
AF/A30/A4C
HQ AFGSC/A5-8
AFLOA/JOCE

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC
OFFICE OF THE ASSISTANT SECRETARY

SAF/IEI
1665 Air Force Pentagon
Washington, DC 20330-1665

Dr. BJ Howerton
Branch Chief
Environmental and Cultural Resources Management
Office of Trust Services
Bureau of Indian Affairs
1001 Indian School Rd NW
Albuquerque, NM 87104

Dear Dr. Howerton,

As the Lead Agency, the United States Department of the Air Force (DAF) is preparing an environmental impact statement (EIS) for the *Ground Based Strategic Deterrent (GBSD) Deployment and Minuteman III Decommissioning and Disposal*. The EIS will address (1) the deployment of the GBSD intercontinental ballistic missile (ICBM) weapon system and (2) decommissioning and disposal of the Minuteman III ICBM weapon system.

The DAF held an information interagency meeting 25 June 2020 where the details of the GBSD EIS were presented that indicated there will be 40.4 miles of new utility corridors proposed across lands that are administered by the BIA. GBSD deployment will primarily occur at Malmstrom AFB, MT; Francis E. Warren AFB, WY; Minot AFB, ND; and around their associated missile fields. Additional maintenance, training, storage, disposal, and support actions would occur at Camp Navajo, AZ; Hill AFB, UT; Utah Test and Training Range (UTTR), UT; and Camp Guernsey, WY. GBSD program overview and map relevant to your area of responsibility are attached.

The DAF requests that as a Cooperating Agency (CA) in accordance with 40 C.F.R. §1501.8, you participate in the several areas of EIS development associated with your areas of jurisdiction by law or special expertise by:

- Participating in the scoping process;
- Assuming responsibility, upon request, for developing information and preparing environmental analysis, including the portions of the EIS concerning the areas you have jurisdiction or special expertise;
- Making staff support available to enhance interdisciplinary review capability and provide specific comments; and
- Meet the DAF's schedule for providing comments and limit your comments to those matters for which you have jurisdiction or special expertise.

To avoid unnecessary delays, the DAF has developed a schedule (attached) setting milestones for reviews and authorizations for implementation of the proposal. We ask that you provide appropriate information and related materials in a timely fashion and establish timelines for your complete review.

Please acknowledge in writing your acceptance or declination of this request. You may decline to participate as a CA in the EIS, per 40 C.F.R. §1501.8(c). Should you or your staff have questions regarding this letter, our point of contact is Mr. Jack Bush, HQ USAF/A4CI, who can be reached at jack.bush@us.af.mil or (703) 867-1082.

Sincerely,

MORIARTY.ROBERT.E.1013267584

Digitally signed by MORIARTY.ROBERT.E.1013267584
Date: 2020.11.04 17:14:47 -05'00'

ROBERT E. MORIARTY, P.E., SES
Deputy Assistant Secretary of the Air Force
(Installations)

Attachments:
1. GBSD Program Overview
2. GBSD Milestone Schedule
3. Maps of lands associated with the proposed GBSD EIS_Minot

cc:
SAF/AQR/GCN
AF/A30/A4C
HQ AFGSC/A5-8
AFLOA/JOCE

From: Howerton, B J <BJ.Howerton@bia.gov>
Sent: Thursday, November 5, 2020 11:19 AM
To: SCHERER, DEVIN C CIV USAF SAF AF/IEIP <devin.scherer.1@us.af.mil>
Cc: OBRUBA, PATRICK J Col US Air Force HAF AF/SAF/IEIP <patrick.obruba@us.af.mil>; ARENSON, STEVEN L GS-14 USAF HAF U S AIR FORCE HQ/SAF/IEI <steven.arenson@us.af.mil>; BUSH, JACK C GS-14 US Air Force HAF AF/A4CP <jack.bush@us.af.mil>; NEWCOMER, STEPHANIE H GS-13 USAF AFMC AFCEC/CZN <stephanie.newcomer@us.af.mil>; LITTLE, GIBB P Lt Col USAF HAF SAF/IEI <gibb.little@us.af.mil>; Holiday, Francis F <Francis.Holiday@bia.gov>; James, James D <James.James@bia.gov>; New Breast, Ira <Ira.NewBreast@bia.gov>; RoundFace, Sharlene <Sharlene.RoundFace@bia.gov>
Subject: [Non-DoD Source] Air Force - GBSD Cooperating Agency Request

Good morning Mr. Scherer,

Thank you for requesting the Bureau of Indian Affairs (BIA) join the Department of the Air Force as a Cooperating Agency in the preparation of the Environmental Impact Statement (EIS) for the Ground Based Strategic Deterrent (GBSD) Deployment and Minuteman III Decommissioning and Disposal.

Yes, BIA would like to join the Department of the Air Force as a Cooperating Agency in the preparation of the GBSD EIS. The BIA can provide comments regarding the proposed 40.4 miles of new utility corridors crossing lands that are administered by the BIA. Please note no project map was attached to the Agency Request letter.

Additionally, BIA understands the GBSD project deployment will primarily occur at Malmstrom AFB, MT; Francis E. Warren AFB, WY; Minot AFB, ND; and around their associated missile fields. Additional maintenance, training, storage, disposal, and support actions would occur at Camp Navajo, AZ; Hill AFB, UT; Utah Test and Training Range (UTTR), UT; and Camp Guernsey, WY.

Once BIA receives the project map identifying the proposed 40.4 miles of new utility corridors crossing lands administered by the BIA, location specific field representatives (POCs) can be assigned. Also, can you provide a list of the 60 tribes USAF is working with? Thank you.

If you have additional questions my office number is 505-563-3013.

Respectfully,

BJ

Dr. BJ Howerton, MBA
Chief, Branch Environmental and Cultural Resource Mgmt
1001 Indian School Rd NW
Albuquerque, NM 87114

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Lewistown Field Office
920 Northeast Main
Lewistown, Montana 59457
http://www.blm.gov/montana-dakotas

March 3, 2021

Devin Scherer, State Cooperative
Office of the Deputy Assistant Secretary
Installation Planning (SAF/IEIP)
1665 Air Force Pentagon, 4B941
Washington, DC 20330

Dear Mr. Scherer:

I am writing to provide a formal response and confirmation to the cooperating agency request regarding cooperator agency status for the Environmental Impact Statement for Ground Based Strategic Deterrent Deployment and Minuteman III Decommissioning and Disposal. I am the Field Manager for the Bureau of Land Management (BLM) Lewistown Field Office and will serve as the point of contact for this project. I do have delegated authority within the BLM project area to participate and sign applicable documents.

The BLM acknowledges the importance of this project and will make every effort to collaborate timely and professionally. If you have any questions, please contact me at (406) 538-1918 or bblumhardt@blm.gov. We look forward to working with you in completing this national security project.

Sincerely,

Brett A. Blumhardt
Field Manager
Lewistown Field Office
Bureau of Land Management

United States Department of the Interior

BUREAU OF RECLAMATION
Missouri Basin Regional Office
P.O. Box 36900
Billings, MT 59107-6900

IN REPLY REFER TO:

MB-4200
2.1.4.17

Mr. Robert E. Moriarty
Deputy Assistant Secretary of the Air Force – SAF/IEI
1665 Air Force Pentagon
Washington, DC 20330-1665

Subject: EIS Cooperator Status by the U.S. Bureau of Reclamation – GBSD and Minuteman III Decommissioning and Disposal

Dear Mr. Moriarty:

Reclamation confirms our acceptance and participation regarding the Environmental Impact Statement (EIS) process currently underway for the Department of the Air Force (DAF) Ground Based Strategic Deterrent (GBSD) and Minuteman III Decommissioning and Disposal. As requested, Reclamation accepts the related cooperating agency status and is glad to assist when and where appropriate.

We understand and support DAF's request for Reclamation to serve as a Cooperating Agency in accordance with 40 C.F.R. §1501.8 and to provide overall interagency cooperation. Reclamation will assist with EIS development as it pertains to our jurisdiction and expertise, including:

- Participating in further scoping.

- Assisting with information development and environmental or cultural resource analyses.

- Providing reasonable staff support to enhance interdisciplinary review and provide comments on matters within our authorities and interests.

Per correspondence and discussions during the past recent months, Reclamation is already engaged in assisting DAF-hired consultants performing surveys for wildlife, wetlands and cultural resources at locations on Reclamation land in Montana.

For further coordination with Reclamation, please contact Mr. Bud Fazio, Missouri Basin Region Supervisor for Environmental and Cultural Resources, by phone at (406) 351-2297, or by email at bfazio@usbr.gov. For the hearing impaired, please call the Federal Relay System at (800) 877-8339.

Sincerely,

Brent C Esplin
Missouri Basin Regional Director
Bureau of Reclamation

cc: Mr. Devin Scherer, State Cooperative,
Office of the Deputy Assistant Secretary,
Installation Planning (SAF/IEIP),
1665 Air Force Pentagon, 4B941,
Washington, DC 20330.
devin.c.scherer.civ@cvr.mil

Mr. Jack Bush, USAF, jack.bush@us.af.mil

Ms. Bonnie Houghton, USAF, bonnie.houghton.ctr@us.af.mil

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, OMAHA DISTRICT
1616 CAPITOL AVENUE
OMAHA, NE 68102-4901

NOVEMBER 10, 2020

SUBJECT: Action No. NWO-2020-01286, Ground Based Strategic Deterrent (GBSD) Deployment and Minuteman III Decommissioning and Disposal.

Robert Moriarty, P.E., SES
Deputy Assistant Secretary of the Air Force
1665 Air Force Pentagon, 4B941
Washington, DC 20330

Dear Mr. Moriarty:

We appreciate your invitation to be a cooperating agency for the U.S. Air Force, Ground Based Strategic Deterrent (GBSD) Deployment and Minuteman III Decommissioning and Disposal project Environmental Impact Statement (EIS). The U.S. Army Corps of Engineers, Omaha District (Corps) jurisdiction over the proposed project is under the authority of Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act. In accordance with Title 40 of the Code of Federal Regulations Part 1501.6, the Corps agrees to participate as a cooperating agency in the preparation of the EIS. The Corps' involvement in the EIS process will be limited to those areas within the Corps' statutory authority, including, but not limited to:

1. Verifying delineations of aquatic resources within the project area;

2. Assist in developing the purpose and need statement;

3. Assist in developing alternatives sufficient to meet the requirements of the U.S. Environmental Protection Agency's §404(b)(1) Guidelines, in order to ensure that impacts to the aquatic environment are avoided and minimized to the maximum extent practicable;

4. Assist in integrating the requirements of NEPA and the §404(b)(1) Guidelines into the EIS;

5. Participate in meetings as resources allow;

6. When requested, review and comment on technical studies that pertain to the Corps' regulatory authority;

7. Review and comment on portions of the administrative draft/final EIS that pertain to the Corps regulatory authority. The review of all administrative draft/final documents will require a minimum of 30 days; and

8. Assist in identifying appropriate and practicable compensatory mitigation for unavoidable impacts to the aquatic environment.

If there are any questions please feel free to contact Michael Stanley at (307) 275-4014 or by e-mail at Michael.G.Stanley@usace.army.mil, and reference **Corps File No. NWO-2020-01286**.

Sincerely,

Eric A. Laux
Chief, Regulatory Branch

USDA United States Department of Agriculture Forest Service Washington Office 1400 Independence Avenue, SW Washington, D.C. 20250

File Code: 1950
Date: June 9, 2021

Mr. Robert Moriarty, P.E., SES
Deputy Assistant Secretary of the Air Force
1665 Air Force Pentagon, 4B941
Washington, D.C. 20330

Dear Mr. Moriarty:

Thank you for your invitation to be a cooperating agency for the U.S. Air Force (USAF), Ground Based Strategic Deterrent Deployment and Minuteman III Decommissioning and Disposal project Environmental Impact Statement (EIS). In accordance with Title 40 of the Code of Federal Regulations Part 1501.8, the USDA Forest Service (Forest Service) agrees to participate as a cooperating agency in the preparation of the EIS.

Points of coordination include:

- The Forest Service agrees to provide agency requirements in support of a comprehensive environmental analysis. This includes site-specific requirements on the Helena-Lewis and Clark National Forest (HLC) and the Pawnee National Grassland (PNG).

- USAF agrees to conduct a site-specific analysis in the EIS of the connected action of issuance of special use authorizations by the Forest Service for USAF requirements.

- The Forest Service agrees to review and comment on portions of the administrative draft/final EIS that pertain to National Forest System (NFS) lands. The review of all draft/final documents will require a minimum of 30 days.

- USAF agrees to incorporate agency-specific wording in the draft EIS NOA addressing requirements contained in 36 CFR 218. The Forest Service will provide the wording.

- USAF agrees to comply with Forest Service requirements for distribution of the draft and final EIS. Distribution list found here: https://www.fs.fed.us/emc/nepa/index.shtml.

- USAF agrees to provide to the Forest Service any agency-specific comments they receive from public scoping efforts and the draft EIS. The Forest Service agrees to provide responses to agency-specific comments received during scoping and/or the draft EIS comment periods.

- The Forest Service agrees to fund and provide required legal notices for 36 CFR 218 notice and comment and administrative review periods. The administrative review filing period begins after the final EIS and Forest Service draft ROD are published.

- The Forest Service agrees to share and discuss any issues raised in the administrative review process that may have substantive impacts to the USAF ROD.

- USAF agrees to delay project implementation on NFS lands until agency RODs are signed and special use authorizations are issued. This is anticipated to be three to four months following the USAF ROD.

- USAF agrees to provide Forest Service access to the project record.

The Agency liaison for coordination is Steve Stadelman, NEPA Specialist, at (202) 570-6865 or steven.stadelman@usda.gov.

The HLC point of contact for project requirements is Tessa Donahue, GIS and Lands Special Use Program Manager, at (406) 431-3974, or tessa.donahue@usda.gov.

The PNG point of contact for project requirements is Vernon Koehler, Minerals and Lands Staff Officer, at (719) 252-4778, or vernon.koehler@usda.gov.

Sincerely,

X Barnie Gyant Digitally signed by Barnie Gyant Date: 2021.06.09 13:50:47 -07'00'

CHRISTOPHER B. FRENCH
Deputy Chief, National Forest System

From: Boroja, Maria T <maria_boroja@fws.gov>
Sent: Thursday, January 21, 2021 1:34 PM
To: SCHERER, DEVIN C CIV USAF SAF AF/IEIP <devin.scherer.1@us.af.mil>
Cc: NEWCOMER, STEPHANIE H GS-13 USAF AFMC AFCEC/CZN <stephanie.newcomer@us.af.mil>; ACKERMAN, MICHAEL D CIV USAF AFMC AFCEC/CZN <michael.ackerman.2@us.af.mil>; BARTHOLOMEW, RUSSELL G GS-13 USAF AFMC AFNWC/NX <russell.bartholomew@us.af.mil>
Subject: [Non-DoD Source] Re: [EXTERNAL] RE: Status update on cooperating agency

Good afternoon Devin,

My apologies, we have been working at breakneck speed to finish some of the previous Administration's priorities.

Please accept this email as confirmation that the Fish and Wildlife Service will continue to work with the Project team on both the NEPA and ESA processes as a cooperating agency.

I am happy to help and am available should you need any assistance.

-----Original Message-----
From: Porter, Gregory C MG USARMY NG WYARNG (USA)
<gregory.c.porter.mil@mail.mil>
Sent: Friday, September 18, 2020 12:38 PM
To: SCHERER, DEVIN C CTR USAF SAF-IE IEIP <devin.scherer.ctr@us.af.mil>
Cc: Smith, Christopher L Col USAF 153 AW (USA)
<christopher.l.smith186.mil@mail.mil>; Moon, Tonja M Maj USAF NG WYANG (USA)
<tonja.m.moon.mil@mail.mil>; Alkire, Eugene S BG USARMY NG WYARNG (USA)
<eugene.s.alkire.mil@mail.mil>; Ciz, Jamie I NFG NG WYARNG (USA)
<jamie.i.ciz.nfg@mail.mil>; Herder, David W Col USAF NG WYANG (USA)
<david.w.herder.mil@mail.mil>; Ridley, Rusty S E CIV NG WYARNG (USA)
<rusty.s.ridley.civ@mail.mil>; Erica Legerski <erica.legerski@wyo.gov>;
Thomson, Loren J COL USARMY NG WYARNG (USA) <loren.j.thomson.mil@mail.mil>;
Nasredine, Fred COL USARMY NG WYARNG (USA) <fred.nasredine.mil@mail.mil>
Subject: SAF/IEI - GBSD Cooperating Agency request (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Mr. Scherer,

The Wyoming Military Department is pleased to join the Department of the Air Force as a Cooperating Agency in the preparation of the Environmental Impact Statement for the Ground Based Strategic Deterrent (GBSD) Deployment and Minuteman III Decommissioning and Disposal.

At this time our POC is COL Loren Thomson, the ARNG Facilities Management Officer. His e-mail is included in the cc line. Please let me know if you need anything else.

Respectfully,

MG Porter

GREGORY C. PORTER, MG, WY NG
The Adjutant General
Joint Forces Headquarters - Wyoming
5410 Bishop Blvd,
Cheyenne, Wyoming 82009
(w)- 307-772-5236
gregory.c.porter.mil@mail.mil
"Ride for the Brand"

CLASSIFICATION: UNCLASSIFIED

B.4 SAMPLE INITIAL CONTACT LETTER TO TRIBES

Page intentionally left blank.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

July 20, 2020

JAMES D. HUNSICKER, GS-15, DAFC
Site Activation Task Force Lead
Air Force Global Strike Command
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Durell Cooper, Chairman & THPO
Apache Tribe of Oklahoma
P.O. Box 1330, 511 East Colorado Street
Anadarko OK 73005

Dear Chairman & THPO Cooper

The United States Air Force contacted you on May 19, 2020, to inform you of its proposed action to deploy the Ground Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). As described in that letter, the Project's deployment actions would occur at the following installations and their associated missile fields: Francis E. Warren Air Force Base (AFB), WY; Malmstrom AFB, MT; and Minot AFB, ND. Maintenance, training, storage, and support actions for the new GBSD ICBM and decommissioning and disposal actions for the Minuteman III ICBM would occur at Hill AFB, UT; the Utah Test and Training Range, UT; Camp Guernsey, WY; and Camp Navajo, AZ.

Pursuant to the National Environmental Policy Act of 1969, as amended (NEPA); and Title 40 of the Code of Federal Regulations Parts 1500–1508; the Council on Environmental Quality's regulations to implement the procedural provisions of NEPA, the Air Force will evaluate the potential environmental impacts associated with the Project through preparation of an Environmental Impact Statement (EIS). As part of its efforts to engage with governments of the federally recognized Native American Tribes in the region, the Air Force is hosting remote scoping meetings with potentially interested Tribes. At these meetings, we will introduce the Project, describe the NEPA process to be completed for the Project, and provide an opportunity for Tribes to ask questions about and voice comments on the Project and the EIS development process.

The Air Force has decided to conduct the Tribal scoping meetings remotely, via conference call, due to the coronavirus (COVID-19) pandemic, and you are being invited to participate in one of those calls. There will be a facilitator for each call, as well as presenters to discuss the Project and EIS process and to address your questions. Attached you will find the meeting presentation with an agenda on slide 2, fact sheets regarding the Project, and a comment form that you can use to submit scoping comments.

To ensure that each Tribe interested in this EIS has an opportunity to actively participate in the scoping meetings, the Air Force has arranged for a small group of Tribes to attend each meeting. Here are the details for your Tribe's conference call:

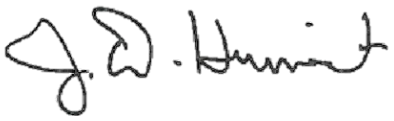
Date and time: Thursday, September 3, 2020 from 1:00 pm to 3:00 pm CDT
Call number: (213) 357-2812 **Access code:** 749 645 059
List of Tribes participating: Jicarilla Apache Tribe, Mescalero Apache Tribe, Apache Tribe of Oklahoma, Fort Sill Apache Tribe
* *The conference call can accommodate up to 10 participants per Tribe.*

If you have any questions about the meeting or would like to request electronic copies of the attachments, please contact Ms. Kathy Roxlau with Tetra Tech, Inc. at (505) 250-7363 or kathy.roxlau@tetratech.com.

Scoping comments can be provided verbally during the scoping meeting, via email at gbsdeis@tetratech.com, or in writing to Tetra Tech, Inc., c/o Jennifer Jarvis, ATTN: GBSD Comments, 10306 Eaton Place, Suite 340, Fairfax, VA, 22030. The attached scoping comment form is provided for your use, if you so choose. Although comments will be accepted throughout EIS development, the Air Force requests that you provide your comments no later than November 13, 2020, to ensure their consideration in the preparation of the Draft EIS.

The Air Force looks forward to engaging with you during the scoping meeting. Thank you in advance for your participation in this effort.

Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Site Activation Task Force Lead
Air Force Global Strike Command

Attachments: Meeting Presentation
Fact Sheet Package
EIS Scoping Comment Form

cc: (with attachments)
Crystal Lightfoot, Culture Program Coordinator

B.5 SAMPLE SCOPING COMMENT REQUEST LETTER TO ALL GOVERNMENT, TRIBAL, AND NON-GOVERNMENT STAKEHOLDERS

Page intentionally left blank.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

September 29, 2020

James D. Hunsicker, GS-15, DAFC
Reply to: Tetra Tech, Inc., c/o Jennifer Jarvis
10306 Eaton Place, Fairfax, VA 22030 ATTN: GBSD Comments

Receiver Name, Title
Organization
Street Address
City ST 12345-6789

Dear Title. Last Name

The United States Air Force (Air Force) will prepare an Environmental Impact Statement (EIS) to evaluate the potential impacts on the human and natural environments of deploying the Ground Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) system and decommissioning and disposing of the Minuteman III ICBM system (the Proposed Action). Deployment-related actions would occur both on-base and in the missile fields at Francis E. Warren Air Force Base (AFB), WY; Malmstrom AFB, MT; and Minot AFB, ND. Additional maintenance, training, storage, testing, support, decommissioning, and disposal actions would occur at Hill AFB, UT; the Utah Test and Training Range, UT; Camp Guernsey, WY; and Camp Navajo, AZ. The EIS will be prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) (Title 42 *United States Code* § 4321); the Council on Environmental Quality regulations for implementing NEPA (Title 40 *Code of Federal Regulations* [CFR] Parts 1500–1508); and the Air Force Environmental Impact Analysis Process (EIAP) as codified in 32 CFR Part 989. The Wyoming Army National Guard is a cooperating agency for this EIS.

The scoping period for the GBSD EIS begins with publication of the Notice of Intent (NOI) to prepare an EIS in the *Federal Register* on or about September 29, 2020. Advertisements will also be published in local newspapers notifying the public of the EIS scoping period. The scoping process is used to involve the public early in planning and developing the EIS and to help identify issues to be addressed in the environmental analysis. Because of public health concerns surrounding the coronavirus (COVID-19) pandemic, the Air Force will not hold face-to-face public scoping meetings. Instead, scoping materials that would have been presented at the meetings are available for review on the project website at https://www.gbsdeis.com. On the website, you will find information about the NEPA process, details of the Proposed Action and alternatives, and opportunities for public engagement and providing comments. The website will become accessible the day the NOI is published.

GBSD deployment activities would include replacing all land-based Minuteman III ICBMs in the United States, including motors, interstages, and missile guidance sets, with the GBSD weapon system, a technologically advanced ICBM system. All launch facilities, communication systems, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The Proposed Action would not include generating or disposing of nuclear material, and the number of land-based nuclear missiles would remain unchanged. Decommissioning and disposal activities would include destruction of all Minuteman III weapon systems and associated components to prevent their further use for their originally intended purpose. While certain components and subsystems of the Minuteman III have been upgraded, most of the fundamental infrastructure used today is the nearly 50-year-old original equipment. Deployment of the GBSD system would begin in the mid-2020s, extending the capabilities of the land-based leg of the U.S. nuclear triad through at least 2075.

The purpose of the Proposed Action is to replace all land-based Minuteman III missiles deployed in the continental United States with the GBSD system. The Proposed Action is needed to meet national security requirements and to comply with the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Publ. L. 115-232 § 1663, 132 Stat. 2153), which directs the Air Force to develop and implement a strategy "to accelerate the development, procurement, and fielding of the ground based strategic deterrent program."

The Proposed Action would be consistent with the 2018 Nuclear Posture Review as well as with all relevant international obligations of the United States. Implementing the Proposed Action would ensure the United States continues to have effective, responsive, and resilient ICBMs and associated infrastructure for its land-based nuclear defense. The proposed ICBMs and supporting upgrades would enable the United States to continue to provide long-term tangible evidence to both allies and potential adversaries of our nuclear weapons capabilities, thus contributing to nuclear deterrence and assurance, and providing a safeguard against arms competition.

The EIS will assess the potential environmental consequences of deploying the GBSD weapon system and decommissioning and disposing of the Minuteman III system. The EIS will also analyze the No Action Alternative, which serves as the baseline against which to compare the Proposed Action. Under the No Action Alternative, the Air Force would continue to maintain and operate the Minuteman III weapon system in its current configuration and the GBSD system would not be deployed.

To effectively define the full range of issues and concerns to be evaluated in the EIS, the Air Force is soliciting scoping comments from interested local, state, and federal agencies and organizations; Native American Tribes; and members of the public. Scoping comments can be provided via a comment form on the project website, via email to gbsdeis@tetratech.com, or in writing to Tetra Tech, Inc., c/o Jennifer Jarvis, 10306 Eaton Place, Suite 340, Fairfax, VA 22030, ATTN: GBSD Comments. Although comments will be accepted at any time during the EIAP, the Air Force requests that you provide your comments no later than November 13, 2020, to ensure their consideration during the preparation of the Draft EIS.

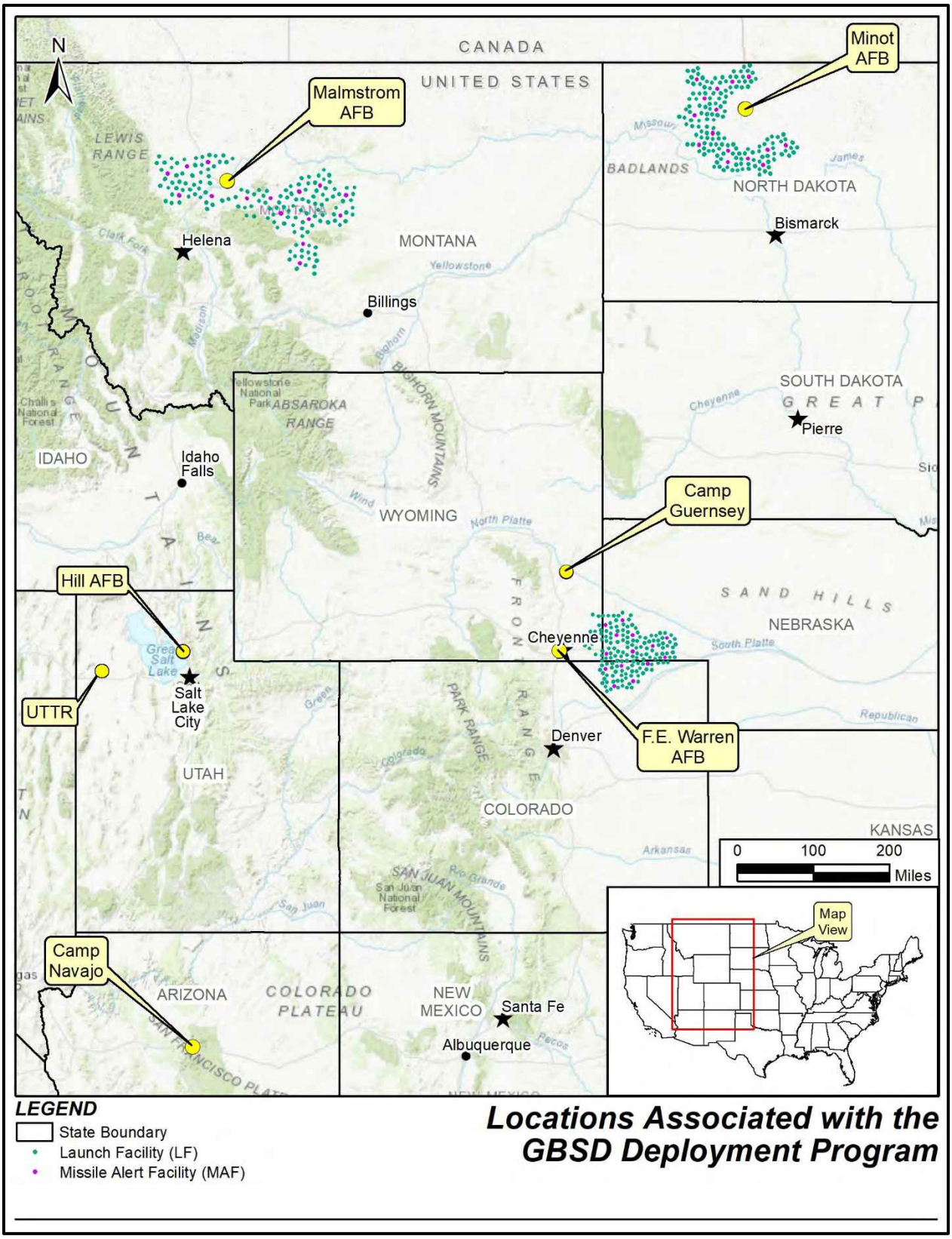
If you are unable to access the website or would like to request printed or digital copies of the scoping materials, please send an email to gbsdeis@tetratech.com.

Thank you for your interest in this project.

Sincerely,

JAMES D. HUNSICKER, GS-15, DAFC
Site Activation Task Force Lead
Air Force Global Strike Command

Attachment:
Locations Associated with the GBSD Deployment Program


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
Yellowstone
SOUTH DAKOTA
Pierre
ABSAROKA RANGE
BIGHORN MOUNTAINS
IDAHO
Idaho Falls
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
PARK RANGE
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Page intentionally left blank.

B.6 CONTACT LIST FOR SCOPING LETTERS TO ALL GOVERNMENT, TRIBAL, AND NON-GOVERNMENT STAKEHOLDERS

Page intentionally left blank.

Contact List for Scoping letters to All Government, Tribal, and Non-government Stakeholders

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
Federal Government								
U.S. Senate								
Senator	Kevin	Cramer	U.S. Senator for North Dakota	US Senate	400 Russell Senate Office Building	Washington	DC	20510
Senator	Kevin	Cramer	U.S. Senator for North Dakota	US Senate	105 Federal Building, 100 First Street SW	Minot	ND	58701
Senator	John	Hoeven	U.S. Senator for North Dakota	US Senate	338 Russell Senate Office Building	Washington	DC	20510
Senator	John	Hoeven	U.S. Senator for North Dakota	US Senate	220 East Rosser Ave, Rm 312	Bismarck	ND	58501
Senator	Mike	Lee	U.S. Senator for Utah	US Senate	361A Russell Senate Office Building	Washington	DC	20510
Senator	Mike	Lee	U.S. Senator for Utah	US Senate	James V. Hansen Federal Building 324 25th St, Ste 1410	Ogden	UT	84401
Senator	Mitt	Romney	U.S. Senator for Utah	US Senate	124 Russell Senate Office Building	Washington	DC	20510
Senator	Jon	Tester	U.S. Senator for Montana	US Senate	724 Hart Senate Office	Washington	DC	20510-2604
Senator	Jon	Tester	U.S. Senator for Montana	US Senate	119 1st Ave N #102	Great Falls	MT	59401
Senator	Steve	Daines	U.S. Senator for Montana	US Senate	320 Hart Senate Office	Washington	DC	20510-2604
Senator	Steve	Daines	U.S. Senator for Montana	US Senate	104 4th Street North, Ste. 302	Great Falls	MT	59401
Senator	Cynthia	Lummis	U.S. Senator for Wyoming	US Senate	Dirksen Senate Office Building, Suite SD-G12	Washington	DC	20510
Senator	Cynthia	Lummis	U.S. Senator for Wyoming	US Senate	Federal Center, Suite 2007	Cheyenne	WY	82001
Senator	John	Barrasso	U.S. Senator for Wyoming	US Senate	307 Dirksen Senate Office Building	Washington	DC	20510
Senator	John	Barrasso	U.S. Senator for Wyoming	US Senate	2120 Capitol Avenue, Suite	Cheyenne	WY	82001
Senator	Michael	Bennet	U.S. Senator for Colorado	US Senate	1200 South College Avenue, Suite 211	Fort Collins	CO	80524
Senator	Michael	Bennet	U.S. Senator for Colorado	US Senate	261 Russell Senate Building	Washington	DC	20510
Senator	Cory	Gardner	U.S. Senator for Colorado	US Senate	2001 S. Shields Street, Building H, Suite 104	Fort Collins	CO	80526
Senator	Cory	Gardner	U.S. Senator for Colorado	US Senate	354 Russell Senate Office Building	Washington	DC	20510
Senator	Deb	Fischer	U.S. Senator for Nebraska	US Senate	120 East 16th Street, Suite 203	Scottsbluff	NE	69361
Senator	Deb	Fischer	U.S. Senator for Nebraska	US Senate	454 Russell Senate Office Building	Washington	DC	20510
Senator	Benjamin	Sasse	U.S. Senator for Nebraska	US Senate	115 Railway Street, Suite C102	Scottsbluff	NE	69361
Senator	Benjamin	Sasse	U.S. Senator for Nebraska	US Senate	107 Russell Senate Office Building	Washington	DC	20510
U.S. House of Representatives								
Representative	Blake	Moore	U.S Representative for Utah	U.S. House of Representatives	1320 Longworth House Office Building	Washington	DC	20515
Representative	Blake	Moore	U.S Representative for Utah	U.S. House of Representatives	324 25th Street	Ogden	UT	84401
Representative	Chris	Stewart	U.S Representative for Utah	U.S. House of Representatives	2242 Rayburn House Office Building	Washington	DC	20515
Representative	John	Curtis	U.S Representative for Utah	U.S. House of Representatives	125 Cannon Office Building	Washington	DC	20515
Representative	Burgess	Owens	U.S Representative for Utah	U.S. House of Representatives	1039 Longworth House Office Building	Washington	DC	20515
Representative	Burgess	Owens	U.S Representative for Utah	U.S. House of Representatives	9067 S. Temple Dr Suite 100	West Jordan	UT	84088
Representative	Kelly	Armstrong	U.S Representative for North Dakota	U.S. House of Representatives	1004 Longworth HOB	Washington	DC	20515
Representative	Kelly	Armstrong	U.S Representative for North Dakota	U.S. House of Representatives	220 E Rosser Ave, Room 228	Bismarck	ND	58501
Representative	Matt	Rosendale	U.S Representative for Montana	U.S. House of Representatives	1037 Longworth HOB	Washington	DC	20515
Representative	Matt	Rosendale	U.S Representative for Montana	U.S. House of Representatives	7 West 6th Avenue Suite 3B	Helena	MT	59601
Representative	Liz	Cheney	U.S Representative for Wyoming	U.S. House of Representatives	416 Cannon House Office Building	Washington	DC	20515

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
Representative	Liz	Cheney	U.S Representative for Wyoming	U.S. House of Representatives	2120 Capitol Avenue Suite 8005	Cheyenne	WY	82001
Representative	Ken	Buck	U.S Representative for Colorado	U.S. House of Representatives	1023 39Th Ave., Suite B	Greeley	CO	80634
Representative	Ken	Buck	U.S Representative for Colorado	U.S. House of Representatives	2455 Rayburn House Office Building	Washington	DC	20515
Representative	Scott	Tipton	U.S Representative for Colorado	U.S. House of Representatives	218 Cannon House Office Building	Washington	DC	20515
Representative	Scott	Tipton	U.S Representative for Colorado	U.S. House of Representatives	225 N 5th St, Ste 702	Grand	CO	81501
Representative	Lauren	Boebert	U.S Representative for Colorado	U.S. House of Representatives	1609 Longworth House Office Building	Washington	DC	20515
Representative	Lauren	Boebert	U.S Representative for Colorado	U.S. House of Representatives	743 Horizon Court Suite 112	Grand	CO	81501
Representative	Diana	DeGette	U.S Representative for Colorado	U.S. House of Representatives	2111 Rayburn House Office Building	Washington	DC	20515
Representative	Diana	DeGette	U.S Representative for Colorado	U.S. House of Representatives	600 Grant St, Ste 202	Denver	CO	80203
Representative	Joe	Neguse	U.S Representative for Colorado	U.S. House of Representatives	1419 Longworth House Office Building	Washington	DC	20515
Representative	Joe	Neguse	U.S Representative for Colorado	U.S. House of Representatives	2503 Walnut St, Ste 300	Boulder	CO	80302
Representative	Doug	Lamborn	U.S Representative for Colorado	U.S. House of Representatives	2371 Rayburn House Office Building	Washington	DC	20515
Representative	Doug	Lamborn	U.S Representative for Colorado	U.S. House of Representatives	1125 Kelly Johnson Blvd, Ste 330	Colorado Springs	CO	80920
Representative	Jason	Crow	U.S Representative for Colorado	U.S. House of Representatives	1229 Longworth House Office Building	Washington	DC	20515
Representative	Jason	Crow	U.S Representative for Colorado	U.S. House of Representatives	3300 S Parker Rd, #100	Aurora	CO	80014
Representative	Ed	Perlmutter	U.S Representative for Colorado	U.S. House of Representatives	1226 Longworth House Office Building	Washington	DC	20515
Representative	Ed	Perlmutter	U.S Representative for Colorado	U.S. House of Representatives	12600 W Colfax Ave, Ste B-	Lakewood	CO	80215
Representative	Adrian	Smith	U.S Representative for Nebraska	U.S. House of Representatives	416 Valley View Dr., Suite 600	Scottsbluff	NE	69361
Representative	Adrian	Smith	U.S Representative for Nebraska	U.S. House of Representatives	502 Cannon HOB	Washington	DC	20515
Representative	Jeff	Fortenberry	U.S Representative for Nebraska	U.S. House of Representatives	1514 Longworth House Office Building	Washington	DC	20515
Representative	Jeff	Fortenberry	U.S Representative for Nebraska	U.S. House of Representatives	301 S 13th St, Ste 100	Lincoln	NE	68508
Representative	Don	Bacon	U.S Representative for Nebraska	U.S. House of Representatives	1024 Longworth House Office Building	Washington	DC	20515
Representative	Don	Bacon	U.S Representative for Nebraska	U.S. House of Representatives	13906 Gold Circle, Ste 101	Omaha	NE	68144
U.S. Army Corps of Engineers								
	James (Jimmy) P	Harding, PE, PMP	Acting Chief, Military Programs Branch, Omaha District	U.S. Army Corps of Engineers	1616 Capitol Ave., Ste. 9000	Omaha	NE	68102
	Eric	Laux	Chief of Regulatory Branch, Omaha District	U.S. Army Corps of Engineers	1616 Capitol Ave., Ste. 9000	Omaha	NE	68102
	Devetta	Hill	Lead Field Project Manager, District Regulatory Office, Omaha District	U.S. Army Corps of Engineers	1616 Capitol Ave., Ste. 9000	Omaha	NE	68102
Ms.	Jennifer	Winter	Regulatory Archaeologist, South Dakota Regulatory Office, Omaha District	U.S. Army Corps of Engineers	28563 Powerhouse Road	Pierre	SD	57501
			Omaha District	U.S. Army Corps of Engineers	1616 Capitol Ave., Ste. 9000	Omaha	NE	68102
			North Dakota Regulatory Office	U.S. Army Corps of Engineers	3319 University Drive	Bismarck	ND	58504
	John	Moeschen	Nebraska program manager	U.S. Army Corps of Engineers	8901 South 154th Street, Suite	Omaha	NE	68138-3621
	Matthew	Wray	Nebraska Regulatory Office, Wehrspann Field Office	U.S. Army Corps of Engineers	8901 South 154th Street, Suite 1	Omaha	NE	68138-3621
	Kiel	Downing	Colorado program manager	U.S. Army Corps of Engineers	9307 South Wadsworth Blvd	Littleton	CO	80128-6901
	Sage	Joyce	Montana program manager	U.S. Army Corps of Engineers	Post Office Box 7032	Billings	MT	59103
	Mike	Happold	Wyoming program manager	U.S. Army Corps of Engineers	Wyoming Regulatory Office, 2232 Dell Range Boulevard, Suite 210	Cheyenne	WY	82009-4142

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
	Michael	Stanley	Project Manager, Wyoming Regulatory Field Office	U.S. Army Corps of Engineers	2232 Dell Range Blvd., Suite 210	Cheyenne	WY	82009
	Pat	McQueary	North Dakota program manager	U.S. Army Corps of Engineers	3319 University Drive	Bismarck	ND	58504
	Ben	Reile	Project Manager	U.S. Army Corps of Engineers	3319 University Drive	Bismarck	ND	58504
	Jade	Metzler	Project Manager	U.S. Army Corps of Engineers				
	Brooke	Davis	Project Manager	U.S. Army Corps of Engineers				
Colonel	John L	Hudson	Commander and District Engineer, Omaha District	U.S. Army Corps of Engineers	1616 Capitol Ave., Ste. 9000	Omaha	NE	68102
	Ted	Streckfuss	Deputy Commander, Omaha District	U.S. Army Corps of Engineers	1616 Capitol Ave., Ste. 9000	Omaha	NE	68102
	Jeff	Tessin	MILCON Projects Coordinator, Omaha District	U.S. Army Corps of Engineers	1616 Capitol Ave., Ste. 9000	Omaha	NE	68102
	Sarah	Miller	Project Manager Environmental Remediation Branch, Omaha District	U.S. Army Corps of Engineers	1616 Capitol Ave., Ste. 9000	Omaha	NE	68102
	Julie	Jacobsen	Cultural Resource Program Manager, Planning Division, Omaha District	U.S. Army Corps of Engineers				
	Sandy	Barnum	District Archaeologist, Planning Division, Omaha District	U.S. Army Corps of Engineers				
	Heath	Kruger	Section 408 Team, Omaha District	U.S. Army Corps of Engineers				
	Jonas	Grundman	Section 408 Team, Omaha District	U.S. Army Corps of Engineers				
	Doug	Simpleman	Project Manager, Remediation Branch, Omaha District	U.S. Army Corps of Engineers	1616 Capitol Ave., Ste. 9000	Omaha	NE	68102
	Aaron	Quinn	Natural Resources Specialist, Omaha District	U.S. Army Corps of Engineers	1616 Capitol Ave., Ste. 9000	Omaha	NE	68102
	Brandon	Sellers	AF/AFCEC Program Manager for USACE, Omaha District	U.S. Army Corps of Engineers	1616 Capitol Ave., Ste. 9000	Omaha	NE	68102
U.S. Department of the Interior, Fish and Wildlife Service								
Ms.	Maria	Boroja	Ecological Services - Landscape Conservation and Restoration, Chief	U.S. Fish and Wildlife Service		Lakewood	CO	
Ms.	Pamela J	Sponholtz	Region 6 Sikes Act Coordinator	U.S. Fish and Wildlife Service	134 Union Boulevard, 6th Floor	Lakewood	CO	80228
Ms.	Meg	Van Ness	Regional Historic Preservation Officer	U.S. Fish and Wildlife Service	134 Union Blvd.	Lakewood	CO	80228
Mr.	Scott	Blackburn	National NEPA Coordinator	U.S. Fish and Wildlife Service	5275 Leesburg Pike	Falls Church	VA	22041-3803
	Jarrad	Kosa	National Sikes Act Coordinator	U.S. Fish and Wildlife Service	5275 Leesburg Pike	Falls Church	VA	22041-3803
Mr.	Drew	Becker	Supervisor, North Dakota Ecological Services	U.S. Fish and Wildlife Service	3425 Miriam Avenue	Bismarck	ND	58501-7926
Ms.	Laura	Romin	Acting Field Supervisor, Utah Ecological Services	U.S. Fish and Wildlife Service	2369 Orton Circle, Suite 50	West Valley City	UT	84119
Mr.	Tyler	Abbott	Field Supervisor, Ecological Services Wyoming Field Office,	U.S. Fish and Wildlife Service	5353 Yellowstone Rd, Suite 308A	Cheyenne	WY	82009
Ms.	Jodi	Bush	Field Supervisor, Ecological Services, Montana Field Office	U.S. Fish and Wildlife Service	585 Shepard Way, Suite 1	Helena	MT	59601
Ms.	Noreen	Walsh	Regional Director, Mountain - Prairie Region Ecological Services Program	U.S. Fish and Wildlife Service	134 Union Boulevard, Suite 650	Lakewood	CO	80228
Mr.	Will	Meeks	Asst. Regional Director for Refuges	U.S. Fish and Wildlife Service				
Ms.	Maureen	Gallagher	Deputy Asst. Regional Director for Refuges	U.S. Fish and Wildlife Service				
Ms.	Allison	Parrish	Zone Archaeologist, MT/UT/WY, Bozeman Fish Technology Center	U.S. Fish and Wildlife Service	4050 Bridger Canyon Road	Bozeman	MT	59715
			Lostwood Natural Wildlife Refuge	U.S. Fish and Wildlife Service	Lostwood NWR, 8315 Highway 8	Kenmare	ND	58746

Stakeholder Mailing List

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
	Chad	Zorn	Des Lacs Natural Wildlife Refuge	U.S. Fish and Wildlife Service			ND	
	Tom	Pabian	Upper Souris Natural Wildlife Refuge	U.S. Fish and Wildlife Service			ND	
	Benjamin	Gilles	Benton Lake Natural Wildlife Refuge and Wetland Management District	U.S. Fish and Wildlife Service			MT	
Ms.	Trina F	Vigil	Clerk/Assistant	U.S. Fish and Wildlife Service		Lakewood	CO	
Mr.	Matt	Hogan	Region 6, Deputy Regional Director	U.S. Fish and Wildlife Service		Lakewood	CO	
Mr.	Steve	Small	Region 6, Assistant Regional Director Ecological Services	U.S. Fish and Wildlife Service				
Mr.	Paul	Abate	Acting Deputy Field Supervisor	U.S. Fish and Wildlife Service	2369 Orton Circle, Suite 50	West Valley City	UT	84119
Ms.	Rita	Reisor	Botanist	U.S. Fish and Wildlife Service	2369 Orton Circle, Suite 50	West Valley City	UT	84119
Ms.	Laura	Romin	Acting Field Supervisor	U.S. Fish and Wildlife Service	2369 Orton Circle, Suite 50	West Valley City	UT	84119
Mr.	George	San Miguel	CO Ecological Services POC	U.S. Fish and Wildlife Service				
Ms.	Eliza B	Hines	Nebraska Ecological Services Office Supervisor	U.S. Fish and Wildlife Service	9325 South Alda Road	Wood River	NE	68883
Ms.	Julie	Reeves	Listing / Recovery, Ecological	U.S. Fish and Wildlife Service	334 Parsley Blvd	Cheyenne	WY	82007
Mr.	Alex	Schubert	Section 7, Ecological Services	U.S. Fish and Wildlife Service	334 Parsley Blvd	Cheyenne	WY	82007
Mr.	Jacob (Jake)	Martin	Assistant Field Supervisor, Montana Ecological Services Field Office	U.S. Fish and Wildlife Service	585 Shephard Way, Suite 1	Helena	MT	59601
Mr.	George	Jordan	Pallid Sturgeon Recovery Coordinator	U.S. Fish and Wildlife Service	2900 4th Ave North, Room 301	Billings	MT	59101
Mr.	Jerry	Reinisch	Fish & Wildlife Biologist (Energy)	U.S. Fish and Wildlife Service	3425 Miriam Avenue	Bismarck	ND	58501-7926
Ms.	Heidi L	Riddle	Fish and Wildlife Biologist, Ecological Services	U.S. Fish and Wildlife Service	3425 Miriam Avenue	Bismarck	ND	58501-7926
Mr.	Steven	Krentz	Supervisory Fish Biologist	U.S. Fish and Wildlife Service	3425 Miriam Ave	Bismarck	ND	58501-7926
Ms.	Amanda	Goldstein	Fish and Wildlife Biologist, Missouri River Fish and Wildlife Conservation Office	U.S. Fish and Wildlife Service	3425 Miriam Ave	Bismarck	ND	58501-7926
Ms.	Bethany F	Davies		U.S. Fish and Wildlife Service		Bismarck	ND	
U.S. Department of the Interior, National Park Service								
Mr.	Bert	Frost	Regional Director	National Park Service Regions 3, 4, and 5 (ND, Montana)	601 Riverfront Drive	Omaha	NE	68102-4226
Mr.	Mike	Reynolds	Regional Director	National Park Service Regions 6, 7, and 8 (CO, UT, WY, MO)	12795 West Alameda Parkway	Denver	CO	80225
Ms.	Meg	Frisbie	Cultural Resources Specialist	National Park Service				
			Headquarters	National Park Service	1849 C Street NW	Washington	DC	20240
U.S. Department of Transportation, Federal Highways Administration								
				Federal Highway Administration	1200 New Jersey Ave., SE	Washington	DC	20590
Mr.	Lee	Potter	Division Administrator	Federal Highway Administration, North Dakota Division	4503 Coleman Street, Suite 205	Bismarck	ND	58503-0567
Mr.	Ivan	stadel	Division Administrator	Federal Highway Administration, Utah Division	2520 West 4700 South, Suite 9A	Salt Lake City	UT	84129
U.S. Department of Agriculture, Forest Service								
Ms.	Melany	Glossa	Deputy Regional Forester, Northern Region	U.S. Department of Agriculture, U.S. Forest Service	26 Fort Missoula Road	Missoula	MT	59804
Mr.	Bill	Avey	Forest Supervisor, Helena-Lewis and Clark National Forest	U.S. Department of Agriculture, U.S. Forest Service	2880 Skyway Drive	Helena	MT	59602
Mr.	Mark	Bodily	Forest Archaeologist, Helena-Lewis and Clark National Forest	U.S. Department of Agriculture, U.S. Forest Service	1220 38th Street North	Great Falls	MT	59405
Mr.	Monte	Williams	Forest Supervisor, Arapaho and Roosevelt National Forests and Pawnee National Grassland	U.S. Department of Agriculture, U.S. Forest Service	2150 Centre Avenue, Building E	Fort Collins	CO	80526

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
Mr.	Lawrence	Fullenkamp	Grasslands Archaeologist, Arapaho and Roosevelt National Forests and Pawnee National Grassland	U.S. Department of Agriculture, U.S. Forest Service	2150 Centre Avenue, Building E	Fort Collins	CO	80526
Mr.	Vern	Koehler	Pawnee National Grassland	U.S. Department of Agriculture, U.S. Forest Service				
Ms.	Arian	Randall	Deputy Forest Archaeologist, Helena-Lewis and Clark National Forest	U.S. Department of Agriculture, U.S. Forest Service	2880 Skyway Drive	Helena	MT	59602
Mr	Jim	Smalls	Ecosystem Management Coordination	U.S. Department of Agriculture, U.S. Forest Service	Mail Stop 1104, 1400 Independence Avenue, SW	Washington	DC	20250
Ms.	Vicki	Christiansen	Chief, Headquarters	U.S. Department of Agriculture, U.S. Forest Service	Sidney R. Yates Federal Building 201 14th St SW	Washington	DC	20227
Mr.	Steve	Stadelman	Headquarters, NEPA	U.S. Department of Agriculture, U.S. Forest Service				
Mr.	Tom	Claeys	State Forester, North Dakota Supervisor's Office	U.S. Department of Agriculture, U.S. Forest Service	240 W. Century Ave.	Bismarck	ND	58503
Mr.	Ken	Rodgers	NEPA Team Leader, Region 4, Intermountain Region	U.S. Department of Agriculture, U.S. Forest Service	Federal Building 324 25th Street	Ogden	UT	84401
Ms.	Leanne	Marten	Regional Forester, Region 1, Northern Region	U.S. Department of Agriculture, U.S. Forest Service	Federal Building - Fort Missoula 26 Fort Missoula Road	Missoula	MT	59804
Mr.	Joe	Alexander	Director Lands, Region 1	U.S. Department of Agriculture, U.S. Forest Service	Federal Building - Fort Missoula 26 Fort Missoula Road	Missoula	MT	59804
Ms.	Julie	Schaefers	Director NEPA & Ecosystems, Region 1	U.S. Department of Agriculture, U.S. Forest Service	Federal Building - Fort Missoula 26 Fort Missoula Road	Missoula	MT	59804
Ms.	Jennifer	Eberlien	Regional Forester, Region 2	U.S. Department of Agriculture, U.S. Forest Service	Federal Center 1617 Cole Boulevard, Building 17	Lakewood	CO	80401-3305
Mr.	Jason	Robertson	Deputy Director Lands, Region 2	U.S. Department of Agriculture, U.S. Forest Service	Federal Center 1617 Cole Boulevard, Building 17	Lakewood	CO	80401-3305
Ms.	Jenna	Sloan	Director NEPA & Planning, Region 2	U.S. Department of Agriculture, U.S. Forest Service	Federal Center 1617 Cole Boulevard, Building 17	Lakewood	CO	80401-3305
Ms.	Bart	Lander	NEPA Program Manager (Acting), Region 2, Rocky Mountain Region	U.S. Department of Agriculture, U.S. Forest Service	1617 Cole Boulevard, Building 17	Lakewood	CO	80401-3305
Mr.	Daniel	Hager	Director of Engineering, Northern Region	U.S. Department of Agriculture, U.S. Forest Service	26 Fort Missoula Road	Missoula	MT	59804
			Salt Lake Ranger District	U.S. Department of Agriculture, U.S. Forest Service	6944 S 3000 E	Cottonwood Heights	UT	84121
Mr.	Bill	Avey	Forest Supervisor, Helena-Lewis and Clark National Forest	U.S. Department of Agriculture, U.S. Forest Service	1220 38th Street North	Great Falls	MT	59405
Ms.	Tessa	Donahue	Land Uses and GIS Program Manager, Helena-Lewis & Clark National Forest	U.S. Department of Agriculture, U.S. Forest Service	1220 38th Street North	Great Falls	MT	59405
U.S. Environmental Protection Agency								
			Headquarters	U.S. Environmental Protection Agency	1200 Pennsylvania Ave NW	Washington	DC	20004
			EPA Region 7 (Nebraska)	U.S. Environmental Protection Agency	100 Centennial Mall N # 289	Lincoln	NE	68508
	Francis	Tran	EPA Region 8	Environmental Protection Agency	1595 Wynkoop Street	Denver	CO	80202-1129
Mr.	Don	Lininger	EPA Region 7, RCRA	Environmental Protection Agency	11201 Renner Boulevard	Lenexa	KS	66219
Ms.	Amy	Hensley	EPA Region 8, RCRA	Environmental Protection Agency	1595 Wynkoop Street	Denver	CO	80202-1129
	Jesse	Newland	EPA Region 8, RCRA	Environmental Protection Agency	1595 Wynkoop Street	Denver	CO	80202-1129
U.S. Department of Agriculture, National Resources Conservation Service								

Stakeholder Mailing List

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
			Headquarters	USDA Natural Resources Conservation Service	1400 Independence Ave SW	Washington	DC	20250
Ms.	Mary	Podoll	State Conservationist	USDA NRCS North Dakota State Office	220 East Rosser Avenue Federal Building, Room 270	Bismarck	ND	58501
Ms.	Emily	Fife	State Conservationist	USDA NRCS Utah State Office	125 South State Street, Room 4010	Salt Lake City	UT	84138-1100
U.S. Geological Service								
			Headquarters	US Geological Survey	1849 C St NW	Washington	DC	20240
			Water Science Center	USGS North Dakota	821 E Interstate Ave	Bismarck	ND	58503
	Cory	Angeroth	Water Science Center	USGS Utah	1594 W North Temple St	Salt Lake City	UT	84116
Advisory Council on Historic Preservation								
Ms.	Katharine	Kerr	Office of Federal Agency Programs	Advisory Council on Historic	401 F Street NW, Suite 308	Washington	DC	20001
Bureau of Indian Affairs								
Ms.	Christie	Avery	Environmental Protection Specialist	Bureau of Indian Affairs				
Dr.	Sebastian. C	LeBeau II	Regional Archaeologist, Great Plains Regional Office, Environmental Office	Bureau of Indian Affairs	115 4th Avenue SE, Suite 100	Aberdeen	SD	57401
Mr.	Mark	Herman	Environmental Engineer, Fort Berthold	Bureau of Indian Affairs				
Dr.	BJ	Howerton	Branch Chief, Environmental and Cultural Resources Management, Office of Trust Services	Bureau of Indian Affairs	1001 Indian School Rd NW, Building 1, Mailbox 44	Albuquerque	NM	87104
			Bureau of Indian Affairs	US Department of the Interior	1849 C Street, N.W. MS-4606	Washington	D.C.	20240
			BIA Great Plains Region (ND)	US Department of the Interior	115 4th Avenue Southeast Suite 400	Aberdeen	SD	57401
Mr.	Dustin	Jansen	Division Director	Utah Division of Indian Affairs	250 N. 1950 W.	Salt Lake City	UT	84116
Mr.	Timothy	LaPointe	Regional Director, Great Plains Regional Office	Bureau of Indian Affairs	115 4th Avenue SE, Suite 400	Aberdeen	SD	57401
	Kayla	Danks	Agency Superintendent, Fort Berthold Agency	Bureau of Indian Affairs	P.O. Box 370 (mail)	New Town	ND	58763
Bureau of Land Management								
Mr.	John	Mehlhoff	State Director, Montana/Dakotas State Office	Bureau of Land Management	5001 Southgate Drive	Billings	MT	59101
Mr.	Gary	Smith	State Archaeologist, Montana/Dakotas State Office	Bureau of Land Management	5001 Southgate Drive	Billings	MT	59101
	Cecil	Werven	ROW & Land Uses Program Lead	Branch of Realty, Lands, & Renewable Energy	5001 Southgate Drive	Billings	MT	59101
Mr.	Andrew R.	Tkach	Division of Decision Support, Planning, and NEPA	Bureau of Land Management	20 M Street, SE	Washington	DC	20003
Mr.	Jim	Ledger	Realty Specialist	Bureau of Land Management				
Ms.	Ruth	Miller	Land Use Specialist	Bureau of Land Management				
Mr.	Mark	Albers	District Manager, North Central District Office	Bureau of Land Management	920 Northeast Main	Lewistown	MT	59457
Mr.	Josh	Chase	Archaeologist, Havre Field Office	Bureau of Land Management	3990 Highway 2 West	Havre	MT	59501
Mr.	Brett	Blumhardt	Field Manager, Lewistown Field Office	Bureau of Land Management	920 Northeast Main	Lewistown	MT	59457
Mr.	Dan	Brunkhorst	Planning and Environmental Coordinator, North Central Montana District and Lewistown Field Office	Bureau of Land Management				
Mr.	David	Jenkins	Headquarters	Bureau of Land Management	1849 C Street NW Rm. 5665	Washington	DC	20240
			BLM Utah	Bureau of Land Management	440 West 200 South, Ste. 500	Salt Lake City	UT	84101
			BLM Eastern Montana/Dakotas District Office	Bureau of Land Management	111 Garryowen Road	Miles City	MT	59301
Bureau of Reclamation								
Dr.	George	Shannon, Jr.,	Regional Archaeologist, Environmental and Cultural Resources Group	Bureau of Reclamation	2021 4th Avenue North	Billings	MT	59101
Mr.	Steve	Davies	Area Manager, Montana Area Office	Bureau of Reclamation	P.O. Box 30137	Billings	MT	59107-0137

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
Mr.	Rick	Hanson	Area Archaeologist, Montana Area Office	Bureau of Reclamation	P.O. Box 30137	Billings	MT	59107-0137
U.S. Department of Energy								
Mr.	John	Weckerle	Division Director at Office of General Counsel, NNSA	Department of Energy				
Mr.	Brian	Costner	Director, Office of NEPA Policy and Compliance	Department of Energy				
Army National Guard								
Mr.	Scott	Benson	NEPA Lead, Camp Guernsey, Wyoming Military Department	Wyoming Army National Guard	5500 Bishop Blvd	Cheyenne	WY	82009
Mr.	Matthew	Icanberry		Wyoming Army National Guard				
Mr.	Jeffrey L.	Coron	ARNG-IEP-M, NEPA/ECOP Program Manager	National Guard Bureau	111 S. George Mason Drive	Arlington	VA	22204-1373
Mr.	Ricky	French	Headquarters	Army National Guard Bureau				
Mr.	Edward	Morrison	Legal Advisor	Army National Guard Bureau				
Mr.	Jeff	Garland		Papago ARNG				
Mr.	Kenneth	Humphrey	Cultural Resources Manager	Wyoming Army National Guard	5410 Bishop Blvd.	Cheyenne	WY	82009
			Wyoming Army National Guard	Army National Guard	5500 Bishop Blvd	Cheyenne	WY	82009
Colonel	Anthony	Hammett	Chief, ARNG G9	Army National Guard	111 S. George Mason Drive	Arlington	VA	22204
Mr.	Eric	Beckley	Natural & Cultural Resources Program Manager	Army National Guard				
Lieutenant Colonel	Bill	Patton	Deputy Garrison Commander, Camp Guernsey	Wyoming Army National Guard	5500 Bishop Blvd	Cheyenne	WY	82009
Major	Sabrina	Kirkpatrick	NEPA	Wyoming Army National Guard				
Colonel	Loren J.	Thomson	ARNG Facilities Management Officer	Wyoming Army National Guard				
State Government								
Government of the State of Montana								
	Shaun	McGrath	Director	Department of Environmental Quality	PO Box 200901	Helena	MT	59620-0901
Mr.	Bryan	Gartland	Deputy Regional Manager, Division of Water Resources	Department of Environmental Quality	PO Box 201601	Helena	MT	59620-1601
	Robert	Ray		Department of Environmental Quality	1520 East Sixth Avenue	Helena	MT	59620
Ms.	Laura	Evilsizer	Compliance Officer	Montana Historical Society State Historic Preservation Office	P.O. Box 201202	Helena	MT	59620
Ms.	Lisa	Axline	ROW Section Supervisor, Real Estate Management Bureau, DNR Trust Lands	Department of Natural Resources and Conservation	P.O. Box 20601	Helena	MT	59620-1601
	Kristine	Baker-Dickenson		Department of Natural Resources and Conservation	N. Sperry Grade Rd.	Clearwater Junction	MT	59823
Mr.	Mike	Tooley	Director	Department of Transportation	PO Box 201001	Helena	MT	59620-1001
Governor	Greg	Gianforte	Governor	Office of the Governor	P.O. Box 200801	Helena	MT	59620-0801
Lieutenant Governor	Kristen	Juras	Lt. Governor	Office of the Governor	P.O. Box 200801	Helena	MT	59620-0801
Mr.	Tim	Fox	Attorney General	Office of the Attorney General	215 N Sanders St	Helena	MT	59601
	Christi	Jacobsen	Secretary Of State	State of Montana	P.O. Box 202801	Helena	MT	59620-2801
	Terri	Mavencamp	Cleanup, Protection, & Redevelopment Section Supervisor/RCRA	Montana Department of Environmental Quality		Helena	MT	

Stakeholder Mailing List

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
Ms.	Becky	Holmes	Section Supervisor	Montana Department of Environmental Quality		Helena	MT	
Mr.	Ben	Thomas	Director	Department of Agriculture	PO Box 200201	Helena	MT	59620-0201
Ms.	Tara	Rice	Director	Department of Commerce	301 S Park	Helena	MT	59601
Ms.	Martha	Williams	Director	Department of Fish, Wildlife, and Parks	PO Box 200701	Helena	MT	59620
	Jodel	Fohn		Montana Historical Society	PO Box 201201	Helena	MT	59620-1201
Mr.	Molly	Kruckenberg	Director	Montana State Historic Preservation Office (SHPO)	P.O. Box 201202	Helena	MT	59620
Mr.	John E.	Tubbs	Director	Department of Natural Resources and Conservation	PO Box 201601	Helena	MT	59620-1601
Mr.	Mike	O'Herron	Southwest Lands Area Manager	Department of Natural Resources and Conservation	1401 27th Avenue	Missoula	MT	59801
Ms.	Sheila	Hogan	Director	Department of Public Health and Human Services	PO Box 4210	Helena	MT	59604-4210
Ms.	Brenda	Nordlund	Acting Commissioner	Commissioner's Office, Department of Labor and Industry	PO Box 1728	Helena	MT	59624-1728
Mr.	Brad	Johnson	Chairman	Montana Public Service Commission	PO Box 202601	Helena	MT	59620-2601
Mr.	Jason	Smith	Director	Governor's Office of Indian Affairs	PO Box 200801	Helena	MT	59620-0801
Government of the State of Wyoming								
Ms.	Mary	Hopkins	State Historic Preservation Officer	Wyoming State Historic Preservation Office	2301 Central Avenue Barrett Building, Third Floor	Cheyenne	WY	82002
Ms.	Jenifer	Scoggin	Director	Wyoming Office of State Lands and Investments	112 West 25th Street Herschler Building, Suite W103	Cheyenne	WY	82002
Ms.	Lily	Barkau	Natural Resources Program Manager	Headquarters, Department of Environmental Quality	200 West 17th Street	Cheyenne	WY	82002
Mr.	Josh	Van Vlack	Asst. State Forester - Operations & Trust Lands	Wyoming State Forestry Division	5500 Bishop Blvd	Cheyenne	WY	82009
Mr.	Brandon	Gebhart	Director	Wyoming Water Development Office	6920 Yellowtail Road	Cheyenne	WY	82002
Mr.	Luke	Reiner	Director	Wyoming Department of Transportation	5300 Bishop Blvd.	Cheyenne	WY	82009
Governor	Mark	Gordon	Governor	Office of the Governor	200 W 24th St	Cheyenne	WY	82002
Secretary	Edward	Buchanan	Secretary of State	State of Wyoming	Herschler Building East, 122 W 25th St, Ste 100	Cheyenne	WY	82002-0020
Mr.	Grant	Frost	Wildlife Biologist	Department Headquarters, Wyoming Game & Fish	5400 Bishop Blvd	Cheyenne	WY	82006
Mr.	Doug	Miyamoto	Director	Department of Agriculture	2219 Carey Avenue	Cheyenne	WY	82002-0100
Mr.	Matt	Withroder	Regional Wildlife Supervisor	Laramie Regional Office, Wyoming Game & Fish	1212 S. Adams Street	Laramie	WY	82070
				Wyoming State Parks, Historic Sites, and Trails	2301 Central Ave. Barrett Building, 4th floor	Cheyenne	WY	82002
Mr.	Colin	McKee	Senior Policy Advisor	Wyoming Department of Environmental Quality	200 West 17th Street, 4th floor	Cheyenne	WY	82002
Mr.	Brian	Wood	Solid & Hazardous Inspection, Compliance & Enforcement (SHWD)	Wyoming Department of Environmental Quality	200 West 17th Street	Cheyenne	WY	82002
Mr.	Troy	Sanders	Federal Facilities Program Manager	Wyoming Department of Environmental Quality	200 West 17th Street	Cheyenne	WY	82002
Mr.	Adam	Deppe		Wyoming Department of Environmental Quality	200 West 17th Street	Cheyenne	WY	82002
Mr.	Ken	Rairigh		Wyoming Department of Environmental Quality	200 West 17th Street	Cheyenne	WY	82002
Mr.	Nate	Holst	Game Warden	Wyoming Game & Fish Department	1864 S Rd	Wheatland	WY	82201
				Wyoming Office of Tourism	5611 High Plains Road	Cheyenne	WY	82007
Mr.	Darin J,	Westby	Director	Wyoming State Parks & Cultural Resources	Barrett Building, 2301 Central Avenue	Cheyenne	WY	82002

Stakeholder Mailing List

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
				Wyoming Department of Transportation	5300 Bishop Blvd.	Cheyenne	WY	82009-3340
Mr.	Bob	Budd	Executive Director	Wyoming Wildlife and Natural Resource Trust	Hathaway Building, 1st Floor, 2300 Capitol Avenue, Ste 161D	Cheyenne	WY	82002
Government of the State of Nebraska								
Mr.	Jim	Macy	Director	Department of Environmental Quality	P.O. Box 98922	Lincoln	NE	68509
	Jesse	Bradley	Interim Director Department of Natural Resources	Department of Natural Resources	P.O. Box 94676	Lincoln	NE	68509-4676
	John	Miller	Natural Resources Program Specialist	Department of Natural Resources	P.O. Box 94676	Lincoln	NE	68509-4676
Mr.	John	Erixson	Director/State Forester	Nebraska Forest Service	102H Forestry Hall	Lincoln	NE	68583-0815
	Kelly	Sudbeck	CEO/Executive/Secretary	Board of Educational Lands and Funds	555 North Cotner Blvd.	Lincoln	NE	68505
Ms.	Jill	Dolberg	Deputy SHPO	Nebraska State Historical Society State Historic Preservation Office	1500 R Street	Lincoln	NE	68508
Mr.	Doug	Hoevet	District 5 Contact, Gering	Nebraska Department of Transportation	P.O. Box 94759	Lincoln	NE	68509
Governor	Pete	Ricketts	Governor	Office of the Governor	P.O. Box 94848	Lincoln	NE	68509-4848
Mr.	Anthony	Goins	Director	Department of Economic Development	P.O. Box 94666	Lincoln	NE	68509-4666
Mr.	Mark	Czaplewski	Commission Member, Wildlife Conservation Interests	Natural Resources Commission	P.O. Box 94676	Lincoln	NE	68508
Ms.	Dannette R.	Smith	Chief Executive Officer	Nebraska Department of Health and Human Services	P.O. Box 95026	Lincoln	NE	68509-5026
Mr.	Jim	Douglas	Director	Nebraska Game and Parks Commission	2200 N. 33rd St.	Lincoln	NE	68503
Mr.	Mike	Hybl	Executive Director	Nebraska Public Service Commission	1200 N Street, Suite 300	Lincoln	NE	68508
Mr.	Jeffery	Edwards		Nebraska Department of Environment and Energy	PO Box 98922	Lincoln	NE	68509-8922
Mr.	Erik	Waiss	Land Management	Nebraska Department of Environment and Energy	PO Box 98922	Lincoln	NE	68509-8922
Ms.	Judi M.	Gaiashkibos	Executive Director	Nebraska Commission on Indian Affairs	P.O. Box 94981	Lincoln	NE	68509-4981
Government of the State of Colorado								
Mr.	Mark	Tobias	Intergovernmental Services Manager	History Colorado Office of Archaeology and Historic Preservation	1200 Broadway	Denver	CO	80203
Mr.	Dan	Gibbs	Executive Director	Department of Natural Resources	1313 Sherman Street, Room 718	Denver	CO	80203
Mr.	Kevin	Reinisch	State Engineer	Department of Natural Resources	1313 Sherman Street, Suite	Denver	CO	80203
Mr.	Matthew	Pollart	District Manager, North Central District Office	Colorado Land Board	360 Oak Avenue, Suite 110	Eaton	CO	80615
Mr.	Mike	Lester	State Forester and Director	Colorado State Forest Service	5060 Campus Delivery	Fort Collins	CO	80523-5060
Ms.	Shoshana M.	Lew	Executive Director	Colorado Department of Transportation	2829 W. Howard Pl.	Denver	CO	80204
Governor	Jared	Polis	Governor	Office of the Governor	State Capitol Building, 200 E. Colfax Ave., Rm. 136	Denver	CO	80203
Lieutenant Gove	Dianne	Primavera	Lt. Governor	State of Colorado	130 State Capitol Building	Denver	CO	80203
Secretary	Jena	Griswold	Secretary of State	State of Colorado	1700 Broadway, Ste 200	Denver	CO	80290
Mr.	Dave	Young	State Treasurer	State of Colorado	140 State Capitol Building	Denver	CO	80203
Mr.	Phil	Weiser	State Attorney General	State of Colorado	1300 Broadway, 10th Fl	Denver	CO	80203
Honorable	Bob	Rankin	State Senator, District 8	State of Colorado	200 E Colfax, Rm 346	Denver	CO	80203
Honorable	Leslie	Herod	State Representative, District 8	State of Colorado	200 E Colfax, Rm 307	Denver	CO	80203
Honorable	Perry	Will	State Representative, District 57	State of Colorado	200 E Colfax, Rm 307	Denver	CO	80203
Ms.	Michelle	Barnes	Executive Director	Department of Human Services	1575 Sherman St., 8th Floor	Denver	CO	80203
Ms.	Michelle	Zimmerman	Commission Chair	Colorado Parks & Wildlife	1313 Sherman St, 6th Fl	Denver	CO	80203

Stakeholder Mailing List

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
Mr.	Dale	Ryden	Project Leader	Colorado River Fishery Project - Grand Junction	445 W Gunnison Ave, Ste 140	Grand Junction	CO	81501
	Tracie	White	State remedial project manager	Colorado Department of Public Health & Environment	4300 Cherry Creek Drive South	Denver	CO	80246
Mr.	Doug	Knappe	Hazardous Waste Program Manager	Colorado Department of Public Health & Environment	4300 Cherry Creek Drive South	Denver	CO	80246
Ms.	Samantha	Albert	Deputy Director	Colorado Office of Economic Development and International Trade	1600 N. Broadway, Suite 2500	Denver	CO	80202
Mr.	Andy	Hill	Community Development Office Program Manager	Division of Local Government	1313 Sherman St., Room 521	Denver	CO	80203
	Morgan	Ferris	Program Manager	Colorado Commission of Indian Affairs	Office of the Lt. Governor 130 State Capitol	Denver	CO	80203
Mr.	Bill	Ryan	Director	Colorado State Land Board	1127 Sherman Street, Suite 300	Denver	CO	80203
Government of North Dakota								
Mr.	L. Dave	Glatt	Director	North Dakota DEQ	918 E. Divide Ave, 4th Floor	Bismarck	ND	58501
Mr.	John	Paczkowski	Interim State Engineer	North Dakota State Water Commission	900 East Boulevard Avenue, Dept 770	Bismarck	ND	58505-0850
Ms.	Jodi A.	Smith	Land Commissioner	North Dakota Department of Trust	1707 N 9th ST	Bismarck	ND	58501
Mr.	Tom	Claeys	State Forester	North Dakota Forest Service	307 - 1st Street East	Bottineau	ND	58318-1100
	Terry	Steinwand	Director	North Dakota Game and Fish	100 N. Bismarck Expressway	Bismarck	ND	58501
Mr.	Jeb	Williams	Wildlife Division Chief	North Dakota Game and Fish	100 N. Bismarck Expressway	Bismarck	ND	58501-5095
Ms.	Lorna	Meidinger	Historic Preservation Specialist	State Historic Preservation Office Archaeological and Historic Preservation Division State Historical Society of North Dakota	612 East Boulevard Avenue	Bismarck	ND	58505
				State of North Dakota Department of Transportation	608 East Boulevard Avenue	Bismarck	ND	58505-0700
			Minot District Office	North Dakota DOT	1305 Highway 2 Bypass East	Minot	ND	58701-7922
Governor	Doug	Burgum	Governor	Office of the Governor	600 East Boulevard Ave	Bismarck	ND	58505-0100
Lieutenant Governor	Brent	Sanford	Lieutenant Governor	Office of Governor	600 East Boulevard Ave	Bismarck	ND	58505-0100
				North Dakota Department of Commerce Tourism Division	1600 E. Century Ave., Suite 2	Bismarck	ND	58502-2057
	Brian	Kroshus	Chairman	North Dakota Public Service Commission	600 E. Boulevard Ave., Dept. 408	Bismarck	ND	58505-0480
	Chris	Parker	Executive Director	Utah Department of Commerce	160 E 300 S	Salt Lake City	UT	84111
			Emergency Preparedness & Response Section	North Dakota Department of Health	1720 Burlington Drive	Bismarck	ND	58504
				North Dakota Department of Labor and Human Rights	600 E Boulevard Ave Department 406, Room 107	Bismarck	ND	58505
Mr.	Robert	Disney	RCRA	North Dakota DEQ	918 E. Divide Ave, 4th Floor	Bismarck	ND	58501
Mr.	Rueben	Panchol	Underground Storage Tanks	North Dakota DEQ	918 E. Divide Ave, 4th Floor	Bismarck	ND	58501
				North Dakota Department of Agriculture	600 E Boulevard Ave Dept 602	Bismarck	ND	58505-0020
Mr.	Scott	Davis	Executive Director	North Dakota Indian Affairs Commission	600 E. Boulevard Ave, 1st floor Judicial Wing, Rm. 117	Bismarck	ND	58505
Government of the State of Utah								
Mr.	Scott	Baird	Executive Director	Utah DEQ	195 N 1950 West	Salt Lake City	UT	84116
Mr.	Mike	Fowlks	Wildlife Director Division of Wildlife Resources	Utah Department of Natural Resources	1594 W North Temple	Salt Lake City	UT	84116
Mr.	Todd	Adams	Director, Division of Water Resources	Utah Department of Natural Resources	1594 W North Temple, Suite 310	Salt Lake City	UT	84116
Mr.	Brian	Cottam	State Forester/Director, Division of Forestry, Fire, and State Lands	Utah Department of Natural Resources	1594 W North Temple, Ste 3520	Salt Lake City	UT	84114-5703
				Utah Department of Transportation	4501 South 2700 West	Salt Lake City	UT	84114

Stakeholder Mailing List

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
Ms.	Savanna	Agardy	Compliance Archaeologist	Utah Division of State History State Historic Preservation Office	—	—	—	—
Governor	Spencer J.	Cox	Governor	Office of the Governor	P.O. Box 142220	Salt Lake City	UT	84114-2220
Lieutenant Gove	Deidre	Henderson	Lt. Governor	State of Utah	P.O. Box 142325	Salt Lake City	UT	84114-2325
	Tony	Young	GRAMA Officer	Utah Governor's Office of Economic Development	60 East South Temple, Suite 300	Salt Lake City	UT	84111-1004
				Utah Labor Commission	160 East 300 South, 3rd Floor	Salt Lake City	UT	84114-6600
Mr.	Brad	Maulding	Corrective Action Manager, Division of Waste Management and Radiation Control	Utah Department of Environmental Quality	P.O. Box 144880	Salt Lake City	UT	84114-4880
			Bureau of Emergency Medical Services and Preparedness	Utah Department of Health	3760 S Highland Drive	Salt Lake City	UT	84106
				Utah Department of Agriculture and Food	350 North Redwood Road	Salt Lake City	UT	84114-6500
Mr.	Dustin	Jansen	Division Director	Utah Division of Indian Affairs	250 N 1950 W.	Salt Lake City	UT	84116
Government of the State of Arizona								
	Sandor	Hopkins	Interim Planning Director	Cascade County Planning Department	121 4th N, Ste 2H/1	Great Falls	MT	59401
Commissioner	Lisa	Atkins	Commissioner	Arizona State Land Department	1616 West Adams Street	Phoenix	AZ	85007
	Misael	Cabrera	Director	Arizona Department of Environmental Quality	1100 W. Washington Street	Phoenix	AZ	85007
Mr.	Edwin	Slade	Office of Administrative Counsel	Arizona Department of Environmental Quality	1100 W. Washington Street	Phoenix	AZ	85007
Ms.	Mary	Cotrell		Arizona Department of Environmental Quality	1100 W. Washington Street	Phoenix	AZ	85007
	Ty	Gray	Director	Arizona Game and Fish Department	5000 W. Carefree Highway	Phoenix	AZ	85007
Mr.	Thomas	Buschatzke	Director	Arizona Department of Water Resources	1110 W. Washington Street, Suite 310	Phoenix	AZ	85007
Mr.	John	Halikowski	Director	Arizona Department of Transportation	1655 W. Jackson Street, MD 126F	Phoenix	AZ	85007
Ms.	Erin	Davis	Archaeological Compliance Specialist	Arizona State Parks State Historic Preservation Office	1100 W. Washington Street	Phoenix	AZ	85007
City and County Government								
Government of the County of Cascade, MT								
	Sandor	Hopkins	Interim Planning Director	Cascade County Planning Department	121 4th N, Ste 2H/1	Great Falls	MT	59401
Mr.	Rick	Schutz	Superintendent, Road and Bridge	Department of Public Works	279 Vaughn S Frontage Rd	Great Falls	MT	59404
	Sandy	Johnson, RS	Environmental Health Division	City-County Health Department	115 4th Street South	Great Falls	MT	59405
Mr.	Joe	Briggs	Cascade County Commissioner – District 1	Cascade County Commissioner's Office	325 2nd Ave N #111	Great Falls	MT	59401
Mr.	James	Larson	Cascade County Commissioner – District 2	Cascade County Commissioner's Office	325 2nd Ave N #111	Great Falls	MT	59401
Ms.	Jane	Weber	Cascade County Commissioner – District 3	Cascade County Commissioner's Office	325 2nd Ave N #111	Great Falls	MT	59401
				Risk/Safety Management	325 2nd Avenue North #119	Great Falls	MT	59401
Government of the County of Chouteau, MT								
Mr.	Clay	Riehl	Commisioner	Board Of County Commissioners	1308 Franklin Street	Fort Benton	MT	59442
Mr.	Bob	Pasha	Commisioner	Board Of County Commissioners	1309 Franklin Street	Fort Benton	MT	59442
Mr.	Daren	Schuster	Commisioner	Board Of County Commissioners	1310 Franklin Street	Fort Benton	MT	59442
Government of the County of Lewis and Clark, MT								
				Community Development and Planning Department	316 N. Park Ave., Room 230	Helena	MT	59623
			Road/Bridge/Sign Operations Superintendent	Department of Public Works	3402 Cooney Drive	Helena	MT	59602

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
Mr.	Andy	Hunthausen	Vice-Chair	Lewis and Clark County Commissioners	316 N. Park Ave. Rm. 345	Helena	MT	59623
Ms.	Susan	Good Geise	Chair	Lewis and Clark County Commissioners	317 N. Park Ave. Rm. 345	Helena	MT	59623
Mr.	Jim	McCormick	Member	Lewis and Clark County Commissioners	318 N. Park Ave. Rm. 345	Helena	MT	59623
Government of the County of Pondera, MT								
Mr.	Dale J.	Seifert	Commisioner	Pondera County Commision	20 4th Ave SW Ste 205	Conrad	MT	59425
Mr.	Thomas A.	Kuka	Commisioner	Pondera County Commision	20 4th Ave SW Ste 205	Conrad	MT	59425
Mr.	Jim	Morren	Commisioner	Pondera County Commision	20 4th Ave SW Ste 205	Conrad	MT	59425
Government of the County of Toole, MT								
Mr.	Joe	Pehan	Chair	Toole County Commision	226 1st St South, Suite 201	Shelby	MT	59474
Ms.	Mary Ann	Harwood	Commisioner	Toole County Commision	226 1st St South, Suite 201	Shelby	MT	59474
Mr.	Don	Hartwell	Commisioner	Toole County Commision	226 1st St South, Suite 201	Shelby	MT	59474
Government of the County of Teton, MT								
Mr.	Paul	Wick	Planner	Teton County Planning Department	PO Box 610	Choteau	MT	59422
Mr.	Alan	Gagne	Superintendent	Road Department	92 Highway 220	Choteau	MT	59422
Commissioner	Jim	Hodgskiss	Teton County Commissioner – District	Teton County	P.O. Box 610	Choteau	MT	59422
Commissioner	Joe	Dellwo	Teton County Commissioner – District	Teton County	P.O. Box 610	Choteau	MT	59422
Commissioner	Richard “Dick”	Snellman	Teton County Commissioner – District	Teton County	P.O. Box 610	Choteau	MT	59422
Ms.	Sara	Budge	Environmental Health Supervisor	Teton County Health Department	905 4th Street Northwest	Choteau	MT	59422
Government of the County of Judith Basin, MT								
Mr.	Roger	Riley	Supervisor	Road Department	91 3rd Street N	Stanford	MT	59479
Commissioner	James D.	Moore	Judith Basin County Commissioner	Judith Basin County	91 3rd St N	Stanford	MT	59479
Commissioner	Don L.	Hajenga	Judith Basin County Commissioner	Judith Basin County	91 3rd St N	Stanford	MT	59479
Commissioner	Cody	McDonald	Judith Basin County Commissioner	Judith Basin County	91 3rd St N	Stanford	MT	59479
	Bonnie	Ostertag		Judith Basin Disaster & Emergency Services	91 3rd St N	Stanford	MT	59479
Government of the County of Fergus, MT								
Ms.	Pamela J.	Vosen	Planning Director	Planning Department	712 W. Main Street, Suite 101	Lewistown	MT	59457
Mr.	John	Anderson	Supervisor	Road Department	PO Box 878	Lewistown	MT	59457
Commissioner	Sandy	Youngbauer	Fergus County Commissioner	Fergus County	712 W Main St, Ste 210	Lewistown	MT	59457
Commissioner	Carl	Seilstad	Fergus County Commissioner	Fergus County	712 W Main St, Ste 210	Lewistown	MT	59457
Mr.	Ross	Butcher	Member District 1	Fergus County Commissioners	712 W Main St, Suite #210	Lewistown	MT	59457
Government of the County of Wheatland, MT								
Ms.	Erin	Fisk	Director	Wheatland Chamber of Commerce	Box 694	Harlowton	MT	59036
				Lewistown Area Chamber of Commerce	408 E Main St	Lewistown	MT	59457
Commissioner	Thomas	Bennett	Wheatland County Commissioner	Wheatland County	201 A Ave NW	Harlowton	MT	59036
Commissioner	David	Miller	Wheatland County Commissioner	Wheatland County	201 A Ave NW	Harlowton	MT	59036
Commissioner	Richard	Moe	Wheatland County Commissioner	Wheatland County	201 A Ave NW	Harlowton	MT	59036
Government of the County of Laramie, WY								
				Planning & Development Office	3966 Archer Pkwy	Cheyenne	WY	82009

Stakeholder Mailing List

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
Mr.	Dave	Bumann	Director	Public Works	13797 Prairie Center Circle	Cheyenne	WY	82009
Mr.	Troy	Thompson	Commissioner	County Commissioner	310 W. 19th St., Suite 300	Cheyenne	WY	82001
Mr.	Tom	Mason	Director	Cheyenne Metropolitan Planning Organization (MPO)	2101 O'Neil Avenue	Cheyenne	WY	82001
Mr.	Roy	Kroeger	Environmental Health Director	Environmental Health	100 Central Ave., Suite 261	Cheyenne	WY	82007
Government of the County of Platte, WY								
Ms.	Amy	Clark	Planning Director	Planning and Zoning	600 9th Street	Wheatland	WY	82201
	Beal	Angle	Road & Bridge Supervisor	Road and Bridge Department	23 Main Drive	Wheatland	WY	82201
Government of the County of Banner, NE								
Mr.	Tom	Neal	Superintendent	Banner County Road Department	PO Box 92	Harrisburg	NE	69345
Mr.	Bob	Gifford	County Commissioner	Banner County Board of Commissioners	3720 Rd 34	Gering	NE	96341
Government of the County of Kimball, NE								
Mr.	Randal	Bymer	Highway Superintendent	Highway Superintendent	PO Box 363	Kimball	NE	61945
Mr.	Larry	Engstrom	Chairman	Board of Commissioners	5310 Rd 52 N	Kimball	NE	61945
Mr.	David L.	Wilson	Kimball County Attorney	Kimball County	116 W 2nd St	Kimball	NE	69145
Mr.	Harry J.	Gillway	Kimball County Sheriff	Kimball County	114 E 3rd St, Ste 12	Kimball	NE	69145
Commissioner	Larry	Engstrom	Chairman, Board of County Commissioners	Kimball County	5310 Rd 52 N	Kimball	NE	69145
Commissioner	Brandon	Mossberg	Vice Chairman, Board of County Commissioners	Kimball County	1228 E 8th St	Kimball	NE	69145
Commissioner	Daria	Anderson-Faden	County Commissioner	Kimball County	P.O. Box 611	Kimball	NE	69145
Government of the County of Cheyenne, NE								
Ms.	Colleen	Terman	Coordinator	Cheyenne County Planning & Zoning	P.O. Box 262	Sidney	NE	69162-0262
Mr.	Douglas	Hart	Highway Superintendent	Cheyenne County Highway Department	P.O. Box 262	Sidney	NE	69162-0262
Government of the County of Weld, CO								
Mr.	Tom	Parko	Planning Director	Planning and Building Department	1555 N. 17th Ave	Greeley	CO	80631
Mr.	Curtis	Hall	Deputy Director	Public Works Department	P.O. Box 758	Greeley	CO	80632
	Gabri	Vergara	Environmental Health Services Co-Director	Health and Environment	1555 N. 17th Ave	Greeley	CO	80631
Ms.	Karla	Ford	BOCC Office Manager	Weld County Commissioners	P.O. Box 758	Greeley	CO	80631
Government of the County of Logan, CO								
Ms.	Carol	Pivonka	Planning and Zoning Technician	Planning, Zoning and Building	315 Main Street, Suite 2	Sterling	CO	80751
Mr.	Jeff	Reeves	Road and Bridge Manager	Road and Bridge Department	12603 CR 33	Sterling	CO	80751
Ms.	Pamela M.	Bacon	Logan County Clerk	Logan County	County Courthouse 315 Main St, Ste 3	Sterling	CO	80751
Ms.	Cynthia	Mills	Heritage Center Coordinator	Heritage Center	821 N. Division Avenue	Sterling	CO	80751
Ms.	Diana	Korbe	Administrative Officer to the BOCC/HR	Human Resources Department	Second Floor of Old Courthouse 315 Main Street	Sterling	CO	80751
Government of the County of Burke, ND								
Ms.	Marla	MacBeth	Coordinator	Burke County Planning & Zoning	P.O. Box 310	Bowbells	ND	58721
Mr.	Ken	Tetrault		Burke County Highway Department Road & Bridge	P.O. Box 310	Bowbells	ND	58721
Government of the County of Renville, ND								
Ms.	Kristy	Titus	JDA/Emergency Manager	Renville County	P.O. Box 68	Mohall	ND	58761-0068
Government of the County of Bottineau, ND								
	Kelsey	Fulsebakke	Office Manager Bottineau County Highway Department	Bottineau County Highway Department	314 5th St W	Bottineau	ND	58318
Mr.	Taylor	Kippen	Director of Tax Equalization/Zoning Administrator	Bottineau County	314 5th St West	Bottineau	ND	58318
Government of the County of Mountrail, ND								
Ms.	Heidi	Kory	Assistant Planner	Mountrail County Planning & Zoning	PO Box 248	Stanley	ND	58784-0248
Ms.	Jana	Hennessy	Mountrail County Engineer	Mountrail County Road and Bridge	PO Box 275	Stanley	ND	58784
Government of the County of Ward, ND								
Ms.	Nancy	Simpson	Planning/Zoning Administrator	Ward County Planning & Zoning	225 Third St. SE	Minot	ND	58701

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
Mr.	Dana	Larsen	Ward Co Engineer, Highway Department	Ward County	P.O. Box 5005	Minot	ND	58702
Mr.	Doug	Diedrichsen	Planning and Zoning Administrator	Ward County	PO Box 5005	Minot	ND	58701
Government of the County of McHenry, ND								
Ms.	Darlene	Carpenter	Auditor	McHenry County Planning	407 Main Street S. Room 201	Towner	ND	58788
	Darlene	Carpenter	Highway Superintendent	McHenry County Road Department	407 Main Street S. Room 201	Towner	ND	58788
Government of the County of McLean, ND								
Mr.	Todd A.	Schreiner	Land Use Administrator	McLean County Planning & Zoning	PO Box 1108	Washburn	ND	58577
Mr.	James	Gray	Highway Superintendent	McLean CountyHighway Department	PO Box 1108	Washburn	ND	58577
Government of the County of Sheridan, ND								
Ms.	Shirley	Murray	Auditor	Sheridan County Planning Board	215 E 2nd St	McClusky	ND	58463
Mr.	Alvin	Gross	Superintendent	Sheridan County Highway Department	215 E 2nd St	McClusky	ND	58463
Government of the County of Salt Lake, UT								
Ms.	Lupita	McClenning	Planning & Development Director	Greater Salt Lake Municipal Services District Planning and Development Services	2001 S State St, N3-600	Salt Lake City	UT	84114
	Scott	Baird	Public Works & Municipal Services Director	Public Works-Engineering	2001 S State Street N3-120	Salt Lake City	UT	84190
Mr.	Blake	Thomas	Director	Salt Lake County Regional Economic Development	2001 S. State Street, Suite S2-100	Salt Lake City	UT	84114-4575
Government of the County of Davis, UT								
Mr.	Bret	Millburn	Planning Commission Representative	Davis County Community and Economic Development	61 South Main Street (Suite 304)	Farmington	UT	84025
	Jason	Fielding	Operations Manager	Davis County Public Works	1500 East 650 North	Fruit Heights	UT	84037
Government of the County of Weber, UT								
				Weber County Planning Department	2380 Washington Blvd., Suite 240	Ogden	UT	84401
Mr.	Joe	Hadley	Road Director	Weber County Roads	2380 Washington Blvd	Ogden	UT	84401
Government of the County of Box Elder, UT								
Ms.	Diane	Fuhriman	Executive Secretary	Box Elder County Planning and Zoning	1 South Main St	Brigham City	UT	84302
Mr.	Bill	Gilson	Road Supervisor	Box Elder County Road Department	5730 West 8800 North	Tremonton	UT	84337
Government of the City of Tooele, UT								
Ms.	Rachelle	Custer	Director	Tooele County Community Development	47 South Main, Room #208	Tooele	UT	84074
Government of the City of Great Falls, MT								
Mr.	Craig	Raymond, CBO	Director	Planning & Community Development	2 Park Drive South, Civic Center, Room 112	Great Falls	MT	59401
Mayor	Bob	Kelly	Mayor	City of Great Falls	P.O. Box 5021	Great Falls	MT	59403
Commissioner	Tracy	Houck	City Commissioner	City of Great Falls	P.O. Box 5021	Great Falls	MT	59403
Commissioner	Mary	Sheehy Moe	City Commissioner	City of Great Falls	P.O. Box 5021	Great Falls	MT	59403
Commissioner	Owen	Robinson	City Commissioner	City of Great Falls	P.O. Box 5021	Great Falls	MT	59403
Commissioner	Rick	Tryon	City Commissioner	City of Great Falls	P.O. Box 5021	Great Falls	MT	59403
Mr.	Greg	Doyon	City Manager	City of Great Falls	P.O. Box 5021	Great Falls	MT	59403
	Gaye	McInerney	Human Resources Director	Human Resources Office	2 Park Drive South, Civic Center, Room 202	Great Falls	MT	59401
Mr.	Paul	Skubinna	Public Works Director	Public Works	P.O. Box 5021	Great Falls	MT	59403
Government of the City of Choteau, MT								
Mayor	Chris	Hindoien	Mayor	City of Choteau	100 1st St NW	Choteau	MT	59422
Mr.	Mark	Major	City Council Member	City of Choteau	100 1st St NW	Choteau	MT	59422
Mr.	Stewart	Merja	City Council Member	City of Choteau	100 1st St NW	Choteau	MT	59422
Government of the City of Harlowton, MT								

Stakeholder Mailing List

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
Mayor	Paul	Otten	Mayor	City of Harlowton	17 Central Ave S	Harlowton	MT	59036
Government of the City of Lewiston, MT								
	Holly	Phelps	City Manager	City of Lewistown	305 West Watson	Lewistown	MT	59457
Ms.	Diane	Oldenberg	City Council Member	City of Lewistown	305 West Watson	Lewistown	MT	59457
Mr.	Dave	Byerly	City Council Member	City of Lewistown	305 West Watson	Lewistown	MT	59457
Ms.	Patty	Turk	City Council Member	City of Lewistown	305 West Watson	Lewistown	MT	59457
Ms.	Diana R.C.	Hewitt	City Council Member	City of Lewistown	305 West Watson	Lewistown	MT	59457
	Gayle	Doney	City Council Member	City of Lewistown	305 West Watson	Lewistown	MT	59457
	Alexzandra	Dunnington	City Council Member	City of Lewistown	305 West Watson	Lewistown	MT	59457
Mr.	Clint	Loomis	City Council Member	City of Lewistown	305 West Watson	Lewistown	MT	59457
Government of the City of Stanford, MT								
Mayor	Kent	Ridgeway	Mayor	City of Stanford	Stanford City Hall, Downtown Main Street	Stanford	MT	59479
Government of the City of Cheyenne, WY								
Mr.	Charles	Bloom	Department Head, Planning and Development	City of Cheyenne	2101 O'Neil Ave, Room 202	Cheyenne	WY	82001
Mayor	Marian J.	Orr	Mayor	City of Cheyenne	2101 O'Neil Ave	Cheyenne	WY	82001
	Rocky	Case	City Council Member	City of Cheyenne	2101 O'Neil Ave	Cheyenne	WY	82001
Mr.	Bryan	Cook	City Council Member	City of Cheyenne	2101 O'Neil Ave	Cheyenne	WY	82001
Mr.	Ken	Esquibel	City Council Member	City of Cheyenne	2101 O'Neil Ave	Cheyenne	WY	82001
Mr.	Pete	Laybourn	City Council Member	City of Cheyenne	2101 O'Neil Ave	Cheyenne	WY	82001
Mr.	Mike	Luna	City Council Member	City of Cheyenne	2101 O'Neil Ave	Cheyenne	WY	82001
Dr.	Mark	Rinne	City Council Member	City of Cheyenne	2101 O'Neil Ave	Cheyenne	WY	82001
Mr.	Scott	Roybal	City Council Member	City of Cheyenne	2101 O'Neil Ave	Cheyenne	WY	82001
Mr.	Dicky	Shanor	City Council Member	City of Cheyenne	2101 O'Neil Ave	Cheyenne	WY	82001
Mr.	Jeff	White	City Council Member	City of Cheyenne	2101 O'Neil Ave	Cheyenne	WY	82001
Ms.	Stephanie	Lowe	Planner II	Cheyenne Historic Preservation Board	2101 O'Neil Ave., Room 205	Cheyenne	WY	82001
Government of the City of Fort Benton, MT								
Mr.	Richard	Morris	Mayor	City of Ft. Benton	1204 Front Street	Ft. Benton	MT	59442
	Lanny Walker	Walker	City Council	City of Ft. Benton	1204 Front Street	Ft. Benton	MT	59442
	Dyke Kalanick	Kalanick	City Council	City of Ft. Benton	1204 Front Street	Ft. Benton	MT	59442
Mr.	Thad Axtman	Axtman	City Council	City of Ft. Benton	1204 Front Street	Ft. Benton	MT	59442
	Merlyn Scott	Scott	City Council	City of Ft. Benton	1204 Front Street	Ft. Benton	MT	59442
Mr.	Roger Axtman	Axtman	City Council	City of Ft. Benton	1204 Front Street	Ft. Benton	MT	59442
	Shireen	Clark	City Council	City of Ft. Benton	1204 Front Street	Ft. Benton	MT	59442
Government of the City of Helena, MT								
			Community Development Department	City of Helena	316 N. Park Ave, Room 445	Helena	MT	59623
	Wilmont Collins	Collins	Mayor	City of Helena	316 N. Park Avenue	Helena	MT	59623
Mr.	Andres Haladay	Haladay	Commisioner	City of Helena	316 N. Park Avenue	Helena	MT	59623
Ms.	Emily Dean	Dean	Commisioner	City of Helena	316 N. Park Avenue	Helena	MT	59623
Mr.	Sean Logan	Logan	Commisioner	City of Helena	316 N. Park Avenue	Helena	MT	59623
Ms.	Heather O'Louglin	O'Loughlin	Commisioner	City of Helena	316 N. Park Avenue	Helena	MT	59623
Government of the Town of Chugwater, WY								
			Zoning and Planning Commission	Town of Chugwater	P.O. Box 243	Chugwater	WY	82210
Mayor	Lisa	Redding	Mayor	Town of Chugwater	P.O. Box 243	Chugwater	WY	82210
Mr.	John	Burns	City Council Member	Town of Chugwater	P.O. Box 243	Chugwater	WY	82210
	Kelly	Cronk	City Council Member	Town of Chugwater	P.O. Box 243	Chugwater	WY	82210
Mr.	Eric	Marlatt	City Council Member	Town of Chugwater	P.O. Box 243	Chugwater	WY	82210
Mr.	Joe	Schirmer	City Council Member	Town of Chugwater	P.O. Box 243	Chugwater	WY	82210
Government of the Town of Guernsey, WY								
	Cris	Baker	Chairman, Planning and Zoning	Town of Guernsey	81 W. Whalen Street	Guernsey	WY	82214
Mayor	Nicholas	Paustian	Mayor	Town of Guernsey	P.O. Box 667	Guernsey	WY	82214
Mr.	Dale	Harris	Town Council Member	Town of Guernsey	P.O. Box 667	Guernsey	WY	82214
	Kellie	Augustyn	Town Council Member	Town of Guernsey	P.O. Box 667	Guernsey	WY	82214
Mr.	Shane	Whitworth	Town Council Member	Town of Guernsey	P.O. Box 667	Guernsey	WY	82214

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
Mr.	Stephen	Kelley, Sr.	Town Council Member	Town of Guernsey	P.O. Box 667	Guernsey	WY	82214
Government of the Town of Torrington, WY								
Mayor	Randy L.	Adams	Mayor	City of Torrington	P.O. Box 250	Torrington	WY	82240
Mr.	Ted	Kinney	City Council Member	City of Torrington	P.O. Box 250	Torrington	WY	82240
Mr.	Bill	Law	City Council Member	City of Torrington	P.O. Box 250	Torrington	WY	82240
Ms.	Deanna	Hill	City Council Member	City of Torrington	P.O. Box 250	Torrington	WY	82240
Government of the City of Wheatland, WY								
Mayor	Brandon	Graves	Mayor	Town of Wheatland	600 9th St	Wheatland	WY	82201
Ms.	Jamie	Schindler	Town Council Member	Town of Wheatland	600 9th St	Wheatland	WY	82201
Mr.	William	Britz	Town Council Member	Town of Wheatland	600 9th St	Wheatland	WY	82201
Mr.	Alan	Madsen	Town Council Member	Town of Wheatland	600 9th St	Wheatland	WY	82201
Mr.	Thane	Ashenhurst	Town Council Member	Town of Wheatland	600 9th St	Wheatland	WY	82201
Government of the City of Sidney, NE								
Mr.	Kevin	Kubo	Chief Building Official, Building, Planning and Zoning	City of Sidney	P.O. Box 79	Sidney	NE	69162
Mayor	Roger	Gallaway	Mayor	City of Sidney	P.O. Box 79	Sidney	NE	69162
Mr.	Joe	Arterburn	Vice Mayor	City of Sidney	P.O. Box 79	Sidney	NE	69162
Mr.	Bob	Olsen	City Council Member	City of Sidney	P.O. Box 79	Sidney	NE	69162
	Burke	Radcliffe	City Council Member	City of Sidney	P.O. Box 79	Sidney	NE	69162
Mr.	Brad	Sherman	City Council Member	City of Sidney	P.O. Box 79	Sidney	NE	69162
Government of the City of Kimball, NE								
Mayor	Keith	Prunty	Mayor	City of Kimball	223 S Chestnut St	Kimball	NE	69145
Mr.	David L.	Wilson	Kimball County Attorney	Kimball County	116 W 2nd St	Kimball	NE	69145
Mr.	Harry J.	Gillway	Kimball County Sheriff	Kimball County	114 E 3rd St, Ste 12	Kimball	NE	69145
Commissioner	Larry	Engstrom	Chairman, Board of County Commissioners	Kimball County	5310 Rd 52 N	Kimball	NE	69145
Commissioner	Brandon	Mossberg	Vice Chairman, Board of County Commissioners	Kimball County	1228 E 8th St	Kimball	NE	69145
Commissioner	Daria	Anderson-Faden	County Commissioner	Kimball County	P.O. Box 611	Kimball	NE	69145
Government of the City of Sterling, CO								
			Department of Public Works	City of Sterling	P.O. Box 4000	Sterling	CO	80751
Mayor	David	Applehans	Mayor	City of Sterling	634 Phelps St	Sterling	CO	80751
Ms.	Brenda	Desormeaux	City Council Member	City of Sterling	327 Cortez St	Sterling	CO	80751
Government of the Town of Ault, CO								
Mayor	Rob	Piotrowski	Mayor	Town of Ault	P.O. Box 1098	Ault	CO	80610
Mr.	Scott	Riley	Mayor Pro-tem	Town of Ault	P.O. Box 1098	Ault	CO	80610
Government of the City of Minot, ND								
				City of Minot Planning and Zoning	515 2nd Avenue SW	Minot	ND	58702
Mayor	Shaun	Sipma	Mayor	City of Minot	515 2nd Ave SW	Minot	ND	58702
	Shannon	Straight	City Council Member	City of Minot	515 2nd Ave SW	Minot	ND	58702
Mr.	Stephan	Podrygula	City Council Member	City of Minot	515 2nd Ave SW	Minot	ND	58702
Mr.	Josh	Wolsky	City Council Member	City of Minot	515 2nd Ave SW	Minot	ND	58702
Mr.	Mark	Jantzer	City Council President	City of Minot	515 2nd Ave SW	Minot	ND	58702
Ms.	Lisa	Olson	City Council Vice President	City of Minot	515 2nd Ave SW	Minot	ND	58702
	Kelly	Matalka	City Clerk	City of Minot	515 2nd Ave SW	Minot	ND	58702
Mr.	Jason T.	Olson	Chief of Police	City of Minot	P.O. Box 5006	Minot	ND	58702
	Jaime	Hauge		Minot Area Development Corporation	1020 20th Ave. SW	Minot	ND	58701
Mr.	Dan	Jonasson	Director	City of Minot Public Works	1025 31st St SE	Minot	ND	58701
Government of the City of Stanley, ND								
Mr.	Todd	Heidbreder	Chairman, Planning and Zoning Committee	City of Stanley	P.O. Box 249	Stanley	ND	58784

Stakeholder Mailing List

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
Mayor	Gary	Weisenberger	Mayor	City of Stanley	P.O. Box 249	Stanley	ND	58784
Government of the City of Washburn, ND								
			Planning and Zoning Board	City of Washburn	P.O. Box 467	Washburn	ND	58577
Mr.	Larry	Thomas	City Commission President	City of Washburn	P.O. Box 467	Washburn	ND	58577
Commissioner	Kit	Baumann	City Commissioner	City of Washburn	P.O. Box 467	Washburn	ND	58577
Commissioner	Noelle	Kroll	City Commissioner	City of Washburn	P.O. Box 467	Washburn	ND	58577
Government of the City of Layton, UT								
Mayor	Joy	Petro	Mayor	City of Layton	437 Wasatch Dr	Layton	UT	84041
Mr.	Zach	Bloxham	City Council Member	City of Layton	437 Wasatch Dr	Layton	UT	84041
Mr.	Tom	Day	City Council Member	City of Layton	437 Wasatch Dr	Layton	UT	84041
Ms.	Dawn	Fitzpatrick	City Council Member	City of Layton	437 Wasatch Dr	Layton	UT	84041
Mr.	Clint	Morris	City Council Member	City of Layton	437 Wasatch Dr	Layton	UT	84041
Mr.	Dave	Thomas	City Council Member	City of Layton	437 Wasatch Dr	Layton	UT	84041
Government of the City of Wendover, UT								
	Klansey	Bateman	Chairman, Planning and Zoning Board	City of Wendover	920 E Wendover Blvd	Wendover	UT	84083
Mayor	Mike	Crawford	Mayor	City of Wendover	920 Wendover Blvd	Wendover	UT	84083
Mr.	Dale	Higley	City Council Member	City of Wendover	920 Wendover Blvd	Wendover	UT	84083
Mr.	Gordon	Stewart	City Council Member	City of Wendover	920 Wendover Blvd	Wendover	UT	84083
Mr.	Manny	Carrillo	City Council Member	City of Wendover	920 Wendover Blvd	Wendover	UT	84083
	Radine	Murphy	City Council Member	City of Wendover	920 Wendover Blvd	Wendover	UT	84083
Ms.	Darlene	Trammell	City Council Member	City of Wendover	920 Wendover Blvd	Wendover	UT	84083
Government of the Town of Wheatland, UT								
				Salt Lake City Planning	451 South State Street Room 406	Salt Lake City	UT	84114-5480
				Salt Lake City Historic Preservation Planning Division	451 South State Street, Room 406	Salt Lake City	UT	84114-5480
Ms.	Erin	Mendenhall	Mayor	Salt Lake City	451 South State Street, Room 306	Salt Lake City	UT	84114-5474
				Salt Lake City Economic Development	451 So. State Street, Room	Salt Lake City	UT	84114
			Transportation Division	Salt Lake City	349 South 200 East - Suite 150	Salt Lake City	UT	84111
Mr.	Scott	Baird	Director	Salt Lake City Public Works & Municipal Services	2001 S State Street N3-600	Salt Lake City	UT	84190-3050
				Salt Lake City Chamber of Commerce	175 E. University Blvd. (400 S), #600	Salt Lake City	UT	84111
Libraries								
Ms.	Sarah	Linder-Parkinson	Library Director	Great Falls Public Library	301 2nd Avenue North	Great Falls	MT	59401-2593
	Della	Yeager	Library Director	Choteau Public Library	P.O. Box 876	Choteau	MT	59422
Ms.	Kathleen	Schreiber	Library Director	Harlowton Public Library	13 Central Ave S	Harlowton	MT	59036
	Dani	Buehler	Director	Lewistown Public Library	701 W Main St	Lewistown	MT	59457
Ms.	Jeanne	Lillegard	Director	Judith Basin County Free Library	P.O. Box 486	Stanford	MT	59479
Ms.	Carolyn	O'Hara	Branch Clerk	Chouteau County Library, Fort Benton	PO Box 639	Fort Benton	MT	59442
Ms.	Joan	Trindle	Branch Librarian	Chouteau County Library, Geraldine	254 Main St	Geraldine	MT	59446
Mr.	John	Finn	Director	Lewis and Clark Library	120 S Last Chance Gulch	Helena	MT	59601
Ms.	Holly	Herring	Branch Librarian	Lewis and Clark Library, Augusta	205 Main St.	Augusta	MT	59410
Ms.	Kate	Radford	Branch Librarian	Lewis and Clark Library, Lincoln	102 9th Ave.	Lincoln	MT	59639
Ms.	Carolyn	Donath	Library Director	Conrad Public Library	15 4th Ave SW	Conrad	MT	49425
				Toole County Library	229 2nd Ave. S	Shelby	MT	59474
	Jonna	Underwood	Library Director	Sheridan County Library	100 W. Laurel Ave.	Plentywood	MT	59254
Ms.	Janet	Anderson	Director	Minot Public Library	516 2nd Ave SW	Minot	ND	58701
Mr.	Ben	Bruton	Reference and Library Instruction Librarian	Gordon B. Olson Library	500 University Avenue West	Minot	ND	58707
				Stanley Public Library	PO Box 249	Stanley	ND	58784-0249
Ms.	Kathy	Keller		Washburn Library	PO Box 1108	Washburn,	ND	58577
	Kashawna	White	Circulation & Branch Services	Laramie County Library	2200 Pioneer Ave	Cheyenne	WY	82001

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
	Angela	Wolff	Reference Librarian	Laramie County Library System		Cheyenne	WY	82001
Ms.	Mary Anne	Green	Librarian	Chugwater Branch Library	301 2nd St	Chugwater	WY	82210
	Julie	Henion	Director	Platte County Library	904 9th St.	Wheatland	WY	82201
Ms.	Becky	Bolinger	Branch Librarian	Guernsey Branch Library	P.O. Box 607	Guernsey	WY	82214
Ms.	Christine	Braddy	Library Director	Goshen County Library	2001 East A St.	Torrington	WY	82240
Ms.	Stephanie	Mika	Office Manager	Sidney Public Library	P.O. Box 119	Sidney	NE	69162
Ms.	Cathleen	Sibal	Kimball County clerk	Kimball Public Library	208 South Walnut	Kimball	NE	69145
Ms.	Sandy	VanDusen		Sterling Library	420 N 5th St	Sterling	CO	80751
				High Plains Library District - Northern Plains Public Library	216 2nd St	Ault	CO	80610
	Chris	Sanford	Library Director	Layton Central Branch	155 N. Wasatch Dr.	Layton	UT	84041
	Kelly	Eveleth	Branch Assistant	West Wendover Branch Library	590 Camper Drive	West Wendover	NV	89883
Local Utility Providers								
				Montana-Dakota Utilities Co.	401 N Main St E, Mobridge, SD 57601			
Mr.	Michael R.	Cashell	Vice President - Transmission	NorthWestern Energy	40 East Broadway	Butte	MT	59701
	Lauren	Khair		National Rural Electric Cooperative Association	4301 Wilson Blvd.	Arlington	VA	22203-1860
Mr.	Robert	Anderson	Manager of Operations	Sun River Electric Cooperative	PO Box 309	Fairfield	MT	59436
Mr.	Paul	Skubinna	Public Works Director	City of Great Falls, Public Works Department	1005 25th Avenue NE	Great Falls	MT	59404
Mr.	Bruce	Hattig	Engineering and Water Resource Manager	City of Cheyenne, Board of Public Utilities	2416 Snyder Ave.	Cheyenne	WY	82001
				Cheyenne Light, Fuel and Power	108 West 18th Street	Cheyenne	WY	82001
				Cheyenne Water and Sewer	2416 Snyder Avenue	Cheyenne	WY	82001
				South Cheyenne Water & Sewer	215 East Allison Road	Cheyenne	WY	82007
				Winchester Hills Utility	1124 Dunn Avenue	Cheyenne	WY	82001
	Brad	Bauman		Sun River Electric				
	Dale			Fergus Electric Co-op				
				Black Hills Energy	P.O. Box 6006	Rapid City	SD	57709
				Utah Public Utilities	Heber M. Wells Building, 2nd Floor, Room 201 160 East 300 South	Salt Lake City	UT	84111
				Rocky Mountain Power	1407 W North Temple	Salt Lake City	UT	84116
				Dominion Energy Utah	PO Box 45360	Salt Lake City	UT	84145-0360
				Burke-Divide Electric Cooperative	9549 Hwy 5 West	Columbus	ND	58727
	Wes	Engbrecht	Director of Communications, Public Relations, and IT	Capital Electric Cooperative	PO Box 730	Bismarck	ND	58502-0730
				McLean Electric Cooperative	P.O. Box 399	Garrison	ND	58540-0399
				City of Minot Utilities	515 2nd Avenue SW	Minot	ND	58702
				Xcel Energy	300 16th St SW	Minot	ND	58701
				Verendrye Electric	1225 Highway 2 Bypass East	Minot	ND	58701
			Natural Gas Provider for Minot	Montana-Dakota Utilities	P.O. Box 5600	Bismarck	ND	58506-5600
				Minot City Water System	515 2nd Avenue SW	Minot	ND	58702
Railroads								
Ms.	Melissa	Leal	Burlington Northern Sante Fe (BNSF) Permit Management Contact for MT and CO	Jones Lang LaSalle Brokerage, Inc. (JLL)	4200 Buckingham Rd., Ste 110	Fort Worth	TX	76155
Ms.	Dana	Brummund	Property Management for MO	Union Pacific Railroad	1400 Douglas Street	Omaha	NE	68179
	Patrick	Jansen	Senior Vice President-Track Infrastructure	Progress Rail Service	P.O. Box 1037	Albertville	AL	35950
Mr.	John	Wiehn	Operations	Central Midland Railway	1400 North Warson Road	St. Louis	MO	63132
				Central Montana Rail, Inc	100 West Railroad Avenue	Denton	MT	59430

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
				Canadian Pacific	7550 Ogden Dale Road S.E.	Calgary	AB, Canada	T2C 4X9
				Northern Plains Rail Companies	P.O. Box 38	Fordville	ND	58231
				ADM	4666 Faries Parkway	Decatur	IL	62526
Mr.	Chad	Dockter	cdockter@dmvwrr.com	Dakota Missouri Valley Western	3501 E Rosser Avenue	Bismarck	ND	58501
Legislators								
Honorable	Jim	Blackburn	Representative- House District 42	State of Wyoming	P.O. Box 831	Cheyenne	WY	82003
Honorable	Landon	Brown	Representative- House District 09	State of Wyoming	5200 Opal Drive	Cheyenne	WY	82009
Honorable	John	Eklund	Representative- House District 10	State of Wyoming	2918 Torrington Highway	Cheyenne	WY	82009
Honorable	Bill	Henderson	Representative- House District 41	State of Wyoming	P.O. Box 20877	Cheyenne	WY	82003
Honorable	Bob	Nicholas	Representative- House District 08	State of Wyoming	6225 Mountainview Drive	Cheyenne	WY	82009
Honorable	Jared	Olsen	Representative- House District 11	State of Wyoming	P.O. Box 4333	Cheyenne	WY	82003
Honorable	Clarence	Styvar	Representative- House District 12	State of Wyoming	580 Willson Court	Cheyenne	WY	82007
Honorable	Sue	Wilson	Representative- House District 07	State of Wyoming	P.O. Box 21035	Cheyenne	WY	82003
Honorable	Dan	Zwonitzer	Representative- House District 43	State of Wyoming	521 Cottonwood Drive	Cheyenne	WY	82001
Honorable	Anthony	Bouchard	Senator- District 06	State of Wyoming	1903 S. Greeley Hwy. #273	Cheyenne	WY	82007
Honorable	Affie	Ellis	Senator- District 08	State of Wyoming	P.O. Box 454	Cheyenne	WY	82003
Honorable	Lynn	Hutchings	Senator- District 05	State of Wyoming	P.O. Box 9603	Cheyenne	WY	82003
Honorable	Tara	Nethercott	Senator- District 04	State of Wyoming	P.O. Box 1888	Cheyenne	WY	82003
Honorable	Stephan	Pappas	Senator- District 07	State of Wyoming	2617 E. Lincolnway Suite A	Cheyenne	WY	82001
Honorable	Steve	Erdman	Senator- District 47	State of Nebraska	Room #1124 P.O. Box 94604	Lincoln	NE	68509
Honorable	Lori	Saine	Representative- House District 63	State of Colorado	200 E Colfax RM 307	Denver	CO	80203
Honorable	Jerry	Sonnenberg	Senator- District 1	State of Colorado	200 E Colfax RM 346	Denver	CO	80203
Honorable	Ross	Fitzgerald	Representative- House District 17	State of Montana	451 1ST RD NE	FAIRFIELD	MT	59436-9205
Honorable	Wendy	Mckamey	Representative- House District 19	State of Montana	33 UPPER MILLEGAN RD	Great Falls	MT	59405-8427
Honorable	Fred	Anderson	Representative- House District 20	State of Montana	1609 39TH ST S	Great Falls	MT	59405-5574
Honorable	Edward	Buttrey	Representative- House District 21	State of Montana	27 GRANITE HILL LN	Great Falls	MT	59405-8041
Honorable	Lola	Sheldon-Galloway	Representative- House District 22	State of Montana	202 SUN PRAIRIE RD	Great Falls	MT	59404-6235
Honorable	Bradley Maxon	Hamlett	Representative- House District 23	State of Montana	PO BOX 49	Cascade	MT	59421-0049
Honorable	Barbara	Bessette	Representative- House District 24	State of Montana	PO BOX 1263	Great Falls	MT	59403-1263
Honorable	Jasmine	Krotkov	Representative- House District 25	State of Montana	PO BOX 1	Neihart	MT	59465-0001
Honorable	Casey	Schreiner	Representative- House District 26	State of Montana	2223 6TH AVE N	Great Falls	MT	59401-1819
Honorable	Joshua	Kasmier	Representative- House District 27	State of Montana	PO BOX 876	Fort Benton	MT	59442-0876
Honorable	Dan	Bartel	Representative- House District 29	State of Montana	PO BOX 1181	Lewistown	MT	59457-1181
Honorable	Wylie	Galt	Representative- House District 30	State of Montana	106 71 RANCH RD	Martinsdale	MT	59053-8752
Honorable	Steve	Fitzpatrick	Senator- District 10	State of Montana	3203 15TH AVE S	Great Falls	MT	59405-5416
Honorable	Tom	Jacobson	Senator- District 11	State of Montana	521 RIVERVIEW DR E	Great Falls	MT	59404-1634
Honorable	Cydnie (Carlie)	Boland	Senator- District 12	State of Montana	1215 6TH AVE N	Great Falls	MT	59401-1601
Honorable	Brian	Hoven	Senator- District 13	State of Montana	1501 MEADOWLARK DR	Great Falls	MT	59404-3325
Honorable	Russel	Tempel	Senator- District 14	State of Montana	PO BOX 131	Chester	MT	59522-0131
Honorable	Ryan	Osmundson	Senator- District 15	State of Montana	1394 S BUFFALO CANYON RD	Buffalo	MT	59418-8005
Honorable	Bruce	Gillespie	Senator- District 9	State of Montana	PO BOX 275	Ethridge	MT	59435-0275
Honorable	Bert	Anderson	Representative- House District 2	State of North Dakota	P.O. Box 604	Crosby	ND	58730-0604
Honorable	Donald	Longmuir	Representative- House District 2	State of North Dakota	P.O. Box 1191	Stanley	ND	58784-1191
Honorable	Jeff	Hoverson	Representative- House District 3	State of North Dakota	1300 72nd Street SE	Minot	ND	58701-9377
Honorable	Bob	Paulson	Representative- House District 3	State of North Dakota	9801 Highway 52 South	Minot	ND	58701-2426
Honorable	Clayton	Fegley	Representative- House District 4	State of North Dakota	10801 240th Street NW	Berthold	ND	58718-9619
Honorable	Terry	Jones	Representative- House District 4	State of North Dakota	P.O. Box 1964	New Town	ND	58763-1964
Honorable	Dick	Anderson	Representative- House District 6	State of North Dakota	1187 77th Street NE	Willow City	ND	58384-9109

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
Honorable	Craig	Johnson	Representative- House District 6	State of North Dakota	8080 17th Avenue NW	Maxbass	ND	58760-9769
Honorable	Jeff	Delzer	Representative- House District 8	State of North Dakota	2919 Fifth Street NW	Underwood	ND	58576-9603
Honorable	Vernon	Laning	Representative- House District 8	State of North Dakota	4121 78th Avenue NE	Bismarck	ND	58503-6396
Honorable	Jon	Nelson	Representative- House District 14	State of North Dakota	420 Sixth Avenue SE	Rugby	ND	58368-2320
Honorable	Robin	Weisz	Representative- House District 14	State of North Dakota	2639 First Street SE	Hurdsfield	ND	58451-9029
Honorable	Larry	Bellew	Representative- House District 38	State of North Dakota	812 Bel Air Place	Minot	ND	58703-1751
Honorable	Dan	Ruby	Representative- House District 38	State of North Dakota	4620 46th Avenue NW	Minot	ND	58703-8710
Honorable	Matthew	Ruby	Representative- House District 40	State of North Dakota	315 Fourth Street NW	Minot	ND	58703-3129
Honorable	Randy	Schobinger	Representative- House District 40	State of North Dakota	3500 30th Street NW	Minot	ND	58703-0312
Honorable	David	Rust	Senator- District 2	State of North Dakota	P.O. Box 1198	Tioga	ND	58852-1198
Honorable	Oley	Larsen	Senator- District 3	State of North Dakota	11051 20th Avenue SE	Minot	ND	58701-2658
Honorable	Jordan	Kannianen	Senator- District 4	State of North Dakota	8011 51st Street NW	Stanley	ND	58784-9562
Honorable	Shawn	Vedaa	Senator- District 6	State of North Dakota	P.O. Box 550	Velva	ND	58790-0550
Honorable	Howard	Anderson, Jr.	Senator- District 8	State of North Dakota	2107 Seventh Street NW	Turtle Lake	ND	58575-9667
Honorable	Jerry	Klein	Senator- District 14	State of North Dakota	P.O. Box 265	Fessenden	ND	58438-0265
Honorable	David	Hogue	Senator- District 38	State of North Dakota	P.O. Box 1000	Minot	ND	58702-1000
Honorable	Karen K.	Krebsbach	Senator- District 40	State of North Dakota	P.O. Box 1767	Minot	ND	58702-1767
Honorable	Merrill	Nelson	Representative- House District 68	State of Utah	164 S 800 E	Grantsville	UT	84029
Honorable	Sandra	Hollins	Representative- House District 23	State of Utah	350 North State, Suite 350	Salt Lake City	UT	84114
Honorable	Scott	Sandall	Senator- District 17	State of Utah	635 N Hillcrest Cir	Tremonton	UT	84337
Honorable	Luz	Escamilla	Senator- District 1	State of Utah	1004 N Morton Dr	Salt Lake City	UT	84116
Tribal Contacts								
Chairman	Durrell	Cooper	Chairman & THPO	Apache Tribe of Oklahoma	PO Box 1330 511 East Colorado Street	Anadarko	OK	73005
	Crystal	Lightfoot	Culture Program Coordinator	Apache Tribe of Oklahoma	PO Box 1330	Anadarko	OK	73005
Chairman	Floyd	Azure	Chairman	Assiniboine and Sioux Tribes	PO Box 1027 501 Medicine Bear Road	Poplar	MT	59255
	Dyan	Youpee	THPO	Assiniboine and Sioux Tribes	PO Box 1027 501 Medicine Bear Road	Poplar	MT	59255
Chairman	Timothy	Davis	Chairman	Blackfeet Tribe	PO Box 850 640 All Chiefs Road Tribal Headquarters	Browning	MT	59417
	Stacey	Keller	Secretary	Blackfeet Tribe	PO Box 850 640 All Chiefs Road Tribal Headquarters	Browning	MT	59417
	John	Murray	THPO	Blackfeet Tribe	PO Box 850 660 All Chiefs Road	Browning	MT	59417
	Virgil	Edwards	Deputy THPO	Blackfeet Tribe	PO Box 850 660 All Chiefs Road	Browning	MT	59417
	Kendall	Edmo	THPO Staff	Blackfeet Tribe	PO Box 850 660 All Chiefs Road	Browning	MT	59417
	Gerald	Wagner	Environmental Office	Blackfeet Tribe	PO Box 850 660 All Chiefs Road	Browning	MT	59417
Chairwoman	Cathy	Chavers	Tribal Chairwoman	Bois Forte Band of Chippewa	PO Box 16	Nett Lake	MN	55772
	Bev	Miller	THPO	Bois Forte Band of Chippewa	PO Box 16	Nett Lake	MN	55772
	Reggie	Wassana	Governor	Cheyenne and Arapaho Tribes of Oklahoma	PO Box 38	Concho	OK	73022
	Max	Bear	Director, Cultural, Acting THPO	Cheyenne and Arapaho Tribes of Oklahoma	PO Box 167	Concho	OK	73022
	Christopher	Rednose	THPO Technical Assistant	Cheyenne and Arapaho Tribes of Oklahoma	PO Box 167	Concho	OK	73022
Chairman	Harold C.	Frazier	Chairman	Cheyenne River Sioux Tribe	PO Box 590	Eagle Butte	SD	57625
	Matthew	Zogel	Scheduling Assistant	Cheyenne River Sioux Tribe	PO Box 590	Eagle Butte	SD	57625
	Steve	Vance	THPO	Cheyenne River Sioux Tribe	Preservation Office PO Box 590	Eagle Butte	SD	57625

Stakeholder Mailing List

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
	Dawnita	Knight	Tribal Archaeologist	Cheyenne River Sioux Tribe	PO Box 590	Eagle Butte	SD	57625
Chairman	Harlan	Baker	Chairman	Chippewa Cree Tribe	PO Box 544 96 Clinic Road North	Box Elder	MT	59521
	Jonathan	Windy Boy	THPO	Chippewa Cree Tribe	PO Box 230 9740 Upper Box Elder Road	Box Elder	MT	59521
	Justin	Moschelle	Tribal Archaeologist	Chippewa Cree Tribe	PO Box 230 9740 Upper Box Elder Road	Box Elder	MT	59521
Chairman	William	Nelson	Chairman	Comanche Nation of Oklahoma	PO Box 908	Lawton	OK	73502
	Martina M.	Callahan	THPO	Comanche Nation of Oklahoma	Comanche Nation Historic Preservation Office #6 SW "D" Avenue, Suite C	Lawton	OK	73507
	Theodore	Villicana	Historic Preservation	Comanche Nation of Oklahoma	Comanche Nation Historic Preservation Office #6 SW "D" Avenue, Suite C	Lawton	OK	73507
Chairwoman	Shelly	Fyant	Chairwoman	Confederated Salish and Kootenai	PO Box 278	Pablo	MT	59855
	Ellie	Bundy	Secretary	Confederated Salish and Kootenai	PO Box 278	Pablo	MT	59855
	Michael	Durglo	Acting THPO	Confederated Salish and Kootenai	PO Box 278	Pablo	MT	59855
Chairman	Rupert	Steele	Tribal Chairman	Confederated Tribes of the Goshute Reservation	PO Box 6104 195 Tribal Center Road	Ibapah	UT	83034
	Phyllis	Naranjo	Secretary	Confederated Tribes of the Goshute Reservation	PO Box 6104 195 Tribal Center Road	Ibapah	UT	83034
	Ozzy	Escarate		Confederated Tribes of the Goshute Reservation	PO Box 6104 195 Tribal Center Road	Ibapah	UT	83034
Chairman	Lester	Thompson, Jr.	Chairman	Crow Creek Sioux Tribe	PO Box 50	Fort	SD	57339
	Merle	Marks	THPO	Crow Creek Sioux Tribe	PO Box 50	Fort	SD	57339
Chairman	Alvin	Not Afraid, Jr.	Chairman	Crow Tribe	PO Box 159 Crow Tribe Executive Branch Bacheeitche Ave	Crow Agency	MT	59022
	R. Knute	Old Crow	Secretary	Crow Tribe	PO Box 159 Crow Tribe Executive Branch Bacheeitche Ave	Crow Agency	MT	59022
	Adrian	Bird, Jr.	THPO Cabinet Head	Crow Tribe	PO Box 159 Crow Tribe Executive Branch Bacheeitche Ave	Crow Agency	MT	59022
	Rodney	Mike	Chair	Duckwater Shoshone Tribe	PO Box 140068	Duckwater	NV	89314
	Kathy	Adams-Blackeye	Vice Chair	Duckwater Shoshone Tribe	PO Box 140068	Duckwater	NV	89314
	Lili Ann	Pete	Secretary	Duckwater Shoshone Tribe	PO Box 140068	Duckwater	NV	89314
	Warren	Graham	Cultural Resources Manager	Duckwater Shoshone Tribe	PO Box 140068	Duckwater	NV	89314
Chairman	Vernon	Hill	Chairman	Eastern Shoshone Tribe	PO Box 538 14 N. Fork Road	Fort Washakie	WY	82514
	Joshua	Mann	THPO	Eastern Shoshone Tribe	PO Box 538 15 N. Fork Road	Fort Washakie	WY	82514
	Wilford	Ferris	Director of Cultural Preservation	Eastern Shoshone Tribe	PO Box 538 15 N. Fork Road	Fort Washakie	WY	82514
Chairwoman	Diane	Buckner	Chairwoman	Ely Shoshone Tribe of Nevada	16 Shoshone Circle	Ely	NV	89301
	Cindy	Marques	Cultural Resources	Ely Shoshone Tribe of Nevada	16 Shoshone Circle	Ely	NV	89301
President	Anthony	Reider	President	Flandreau Santee Sioux Tribe	PO Box 283	Flandreau	SD	57028
	Garrie	Kills A Hundred	THPO	Flandreau Santee Sioux Tribe	PO Box 283	Flandreau	SD	57028
Chairman	Kevin	DuPuis	Chairman	Fond du Lac Band of Lake Superior Chippewa	1720 Big Lake Road	Cloquet	MN	55720
	Jill	Hoppe	THPO	Fond du Lac Band of Lake Superior Chippewa	1720 Big Lake Road	Cloquet	MN	55720
President	Andrew "Andy"	Werk, Jr.	President	Fort Belknap Indian Community	656 Agency Main Street	Harlem	MT	59526
	Michael J.	Black Wolf	THPO	Fort Belknap Indian Community	656 Agency Main Street	Harlem	MT	59526
	Emma	Filesteel	Section 106	Fort Belknap Indian Community	656 Agency Main Street	Harlem	MT	59526

Stakeholder Mailing List

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
	Kolynn	Plumage	THPO Compliance Officer	Fort Belknap Indian Community	656 Agency Main Street	Harlem	MT	59526
Chairwoman	Lori	Gooday Ware	Chairwoman	Fort Sill Apache Tribe	43187 US Hwy 281	Apache	OK	73006
	Leland	Darrow	THPO	Fort Sill Apache Tribe	43187 US Hwy 281	Apache	OK	73006
	Jennifer	Heminokeky	Environment Director	Fort Sill Apache Tribe	43187 US Hwy 281	Apache	OK	73006
Chairperson	Robert	Deschampe	Chairperson	Grand Portage Band of Lake Superior Chippewa	PO Box 428	Grand Portage	MN	55605
	Jared	Swader	Interim THPO	Grand Portage Band of Lake Superior Chippewa	PO Box 428	Grand Portage	MN	55605
	Timothy	Nuvangyaoma	Chair	Hopi Tribe	PO Box 123	Kykotsmovi	AZ	86039
	Theresa	Lomakema	Administrative Secretary	Hopi Tribe	PO Box 123	Kykotsmovi	AZ	86039
	Stewart	Koyiyumptewa	THPO	Hopi Tribe	PO Box 123	Kykotsmovi	AZ	86039
President	Darrell	Paiz	President	Jicarilla Apache Tribe	PO Box 507 Bldg. No. 25 Hawks Drive	Dulce	NM	87528
	Jeffrey	Blythe	THPO, Office of Cultural Affairs	Jicarilla Apache Tribe	PO Box 1367	Dulce	NM	87528
Chairman	Matthew	Komalty	Chairman	Kiowa Tribe of Oklahoma	PO Box 369	Carnegie	OK	73015
	Faron	Jackson, Sr.	Chairman	Leech Lake Band of Ojibwe	190 Sailstar Drive NE	Cass Lake	MN	56633
	Amy	Burnette	THPO	Leech Lake Band of Ojibwe	115 6th Street, NW, Suite E	Cass Lake	MN	56633
Chairman	Gerald	Gray	Chairman	Little Shell Tribe of Chippewa Indians	615 Central Ave W	Great Falls	MT	59404
	Clarence	Sivertsen	1st Vice Chairman	Little Shell Tribe of Chippewa Indians	615 Central Ave W	Great Falls	MT	59404
	Duane	Reid	THPO	Little Shell Tribe of Chippewa Indians	615 Central Ave W	Great Falls	MT	59404
Chairman	Boyd	Gourneau	Chairman	Lower Brule Sioux Tribe	PO Box 187	Lower Brule	SD	57548
	Clair	Green	THPO	Lower Brule Sioux Tribe	PO Box 187	Lower Brule	SD	57548
President	Robert	Larsen	President	Lower Sioux Indian Community	PO Box 308	Morton	MN	56270
	Cheyanne	St. John	THPO; Cansayapi Cultural Dept. Director	Lower Sioux Indian Community	32469 Redwood County Highway 2	Morton	MN	56270
	Gabe	Aquilar	President	Mescalero Apache Tribe	PO Box 227	Mescalero	NM	88340
	Holly	Houghten	THPO	Mescalero Apache Tribe	PO Box 227	Mescalero	NM	88340
	Melanie	Benjamin	Chief Executive	Mille Lacs Band of Ojibwe	43408 Oodena Drive	Onamia	MN	56359
	Terry	Kemper	THPO	Mille Lacs Band of Ojibwe	43408 Oodena Drive	Onamia	MN	56359
President	Jonathan	Nez	President	Navajo Nation	100 Parkway P.O. Box 7440	Window Rock	AZ	86515
	Richard	Begay	THPO, Historic Preservation Department	Navajo Nation	P.O. Box 4950	Window Rock	AZ	86515
	Tamara	Billie	Senior Archaeologist, Historic Preservation Department	Navajo Nation	P.O. Box 4950	Window Rock	AZ	86515
Chairman	Lee	Spoonhunter	Chairman	Northern Arapaho Tribe	PO Box 396	Fort Washakie	WY	82514
	Devin	Oldman	THPO Director	Northern Arapaho Tribe	P.O. Box 67	St. Stevens	WY	82524
	Crystal	C'Bearing	THPO Deputy Director	Northern Arapaho Tribe	PO Box 67	St. Stevens	WY	82524
	Rynalea	Whiteman Pena	President	Northern Cheyenne Tribe	PO Box 128 600 Cheyenne Ave	Lame Deer	MT	59043
	Maxine	Limberhand	Executive Assistant to President	Northern Cheyenne Tribe	PO Box 128 600 Cheyenne Ave	Lame Deer	MT	59043
	Teanna	Limpy	THPO Director	Northern Cheyenne Tribe	PO Box 128 600 Cheyenne Ave	Lame Deer	MT	59043
Chairman	Dennis	Alex	Chairman	Northwestern Band of the Shoshone Nation	707 North Main Street	Brigham City	UT	84302
	Michael	Gross	Secretary	Northwestern Band of the Shoshone Nation	707 North Main Street	Brigham City	UT	84302
	George	Grover	Director	Northwestern Band of the Shoshone Nation	707 North Main Street	Brigham City	UT	84302
	Patty	Timbimboo-Madsen	Cultural Resources Director	Northwestern Band of the Shoshone Nation	707 North Main Street	Brigham City	UT	84302
President	Julian	Bear Runner	President	Oglala Sioux Tribe	PO Box 2070 107 West Main Street	Pine Ridge	SD	57770

Stakeholder Mailing List

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
	Thomas	Brings	THPO	Oglala Sioux Tribe	PO Box 2070 107 West Main Street	Pine Ridge	SD	57770
Chairperson	Tamara	Borchardt-Slayton	Tribal Chairperson	Paiute Indian Tribe of Utah	440 North Paiute Drive	Cedar City	UT	84721
	Shane	Parashonts	Tribal Administrator	Paiute Indian Tribe of Utah	440 North Paiute Drive	Cedar City	UT	84721
	Carol	Garcia	Administrative Assistant	Paiute Indian Tribe of Utah	440 North Paiute Drive	Cedar City	UT	84721
	Dorena	Martineau	Cultural Resources Director	Paiute Indian Tribe of Utah	440 North Paiute Drive	Cedar City	UT	84721
			President	Pawnee Nation of Oklahoma	PO Box 470 881 Little Dee Drive	Pawnee	OK	74058
	Matt	Reed	THPO	Pawnee Nation of Oklahoma	PO Box 470 657 Harrison Street	Pawnee	OK	74058
President	Ms. Shelley	Buck	President	Prairie Island Indian Community	5636 Sturgeon Lake Road	Welch	MN	55089
	Lucy	Taylor	Vice President	Prairie Island Indian Community	5636 Sturgeon Lake Road	Welch	MN	55089
	Ms. Jody	Johnson	Tribal Council Executive Asst	Prairie Island Indian Community	5636 Sturgeon Lake Road	Welch	MN	55089
Governor	Richard	Aspenwind	Governor	Pueblo of Taos	PO Box 1846	Taos	NM	87571
	Bernard	Lujan	War Chief (Historic Preservation)	Pueblo of Taos	PO Box 2596	Taos	NM	87571
Governor	Val	Panteah, Sr.	Governor	Pueblo of Zuni	PO Box 339 1203B State HWY 53	Zuni	NM	87327
Lieutenant Gove	Carlton	Bowekaty	Lieutenant Governor	Pueblo of Zuni	PO Box 339 1203B State HWY 53	Zuni	NM	87327
	Kurt	Dongoske	THPO	Pueblo of Zuni	PO Box 1149	Zuni	NM	87327
Chairman	Darrell	Seki, Sr.	Chairman	Red Lake Band of Chippewa Indians	PO Box 550	Red Lake	MN	56671
	Kade	Ferris	THPO	Red Lake Band of Chippewa Indians	PO Box 274	Red Lake	MN	56671
President	Rodney M.	Bordeaux	President	Rosebud Sioux Tribe	PO Box 430 11 Legion Ave.	Rosebud	SD	57570
	Nicole	Marshall	Executive Administrative Assistant	Rosebud Sioux Tribe	PO Box 430 11 Legion Ave.	Rosebud	SD	57570
	Benjamin K.	Rhodd	THPO, NAGPRA Contact	Rosebud Sioux Tribe	PO Box 809	Rosebud	SD	57570
	Benjamin	Young	THPO Compliance Officer	Rosebud Sioux Tribe	PO Box 809	Rosebud	SD	57570
President	Carlene	Yellowhair	President	San Juan Southern Paiute Tribe of Arizona	PO Box 2950	Tuba City	AZ	86045
Vice President	Candelora	Lehi	Vice President	San Juan Southern Paiute Tribe of Arizona	PO Box 2950	Tuba City	AZ	86045
	Tamara	Talaswaima	Tribal Secretary	San Juan Southern Paiute Tribe of Arizona	PO Box 2950	Tuba City	AZ	86045
	Jack	Conovaloff	Tribal Administrator	San Juan Southern Paiute Tribe of Arizona	PO Box 2950	Tuba City	AZ	86045
Chairman	Roger	Trudell	Chairman	Santee Sioux Nation	108 Spirit Lake Ave West	Niobrara	NE	68760
	Misty	Frazier	THPO	Santee Sioux Nation	52946 Highway 12, Suite 2	Niobrara	NE	68760
	Ellen	Roberts		Santee Sioux Nation	52946 Highway 12, Suite 2	Niobrara	NE	68760
Chairman	Keith	Anderson	Chairman	Shakopee Mdewakanton Sioux Community	2330 Sioux Trail NW	Prior Lake	MN	55372
	Leonard	Wabasha	Director, Cultural Resources	Shakopee Mdewakanton Sioux Community	2330 Sioux Trail NW	Prior Lake	MN	55372
Chairman	Tino	Batt	Chairman	Shoshone-Bannock Tribes	PO Box 306	Fort Hall	ID	83203
	Donna	Thompson	Secretary	Shoshone-Bannock Tribes	PO Box 306	Fort Hall	ID	83203
	Louis	Dixey	Cultural Resources Director	Shoshone-Bannock Tribes	PO Box 306	Fort Hall	ID	83203
	Carolyn	Smith	Cultural Resources Coordinator	Shoshone-Bannock Tribes	PO Box 306	Fort Hall	ID	83203
Chairman	Colin	Thomas	Chairman	Shoshone-Paiute Tribes	PO Box 219 1036 Idaho State Highway 51	Owyhee	NV	89832
	Angele	SaBori	Secretary	Shoshone-Paiute Tribes	PO Box 219 1036 Idaho State Highway 51	Owyhee	NV	89832
	Lynneil	Brady	Acting Cultural Resources Director	Shoshone-Paiute Tribes	PO Box 219 1036 Idaho State Highway 51	Owyhee	NV	89832
Chairman	Dave	Flute	Chairman	Sisseton-Wahpeton Oyate	PO Box 509	Agency	SD	57262
	Diane	Desrosiers	THPO	Sisseton-Wahpeton Oyate	PO Box 907	Agency	SD	57262

Stakeholder Mailing List

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
Chairwoman	Candace	Bear	Chairwoman	Skull Valley Band of Goshute Indians	PO Box 448	Grantsville	UT	84029
	Sheila	Urias	Secretary	Skull Valley Band of Goshute Indians	PO Box 448	Grantsville	UT	84029
Chairwoman	Christine	Sage	Chairwoman	Southern Ute Indian Tribe	PO Box 737 356 Ouray Drive	Ignacio	CO	81137
	Sunshine	Flores Whyte	Executive Assistant	Southern Ute Indian Tribe	PO Box 737 356 Ouray Drive	Ignacio	CO	81137
	Shelly	Thompson	Cultural Preservation Director	Southern Ute Indian Tribe	PO Box 737 356 Ouray Drive	Ignacio	CO	81137
	Cassandra	Atencio	NAGPRA Coordinator	Southern Ute Indian Tribe	PO Box 737 356 Ouray Drive	Ignacio	CO	81137
	Garrett	Briggs	NAGPRA Apprentice	Southern Ute Indian Tribe	PO Box 737 356 Ouray Drive	Ignacio	CO	81137
Chairman	Douglas	Yankton	Chairman	Spirit Lake Nation	PO Box 359 816 Third Avenue North	Fort Totten	ND	58335
	Dr. Erich	Longie	THPO	Spirit Lake Nation	PO Box 359 816 Third Avenue North	Fort Totten	ND	58335
Chairman	Mike	Faith	Chairman	Standing Rock Sioux Tribe	PO Box D, Building #1 North Standing Rock Ave	Fort Yates	ND	58538
	A.	Cordova	Executive Assistant	Standing Rock Sioux Tribe	PO Box D, Building #1 North Standing Rock Ave	Fort Yates	ND	58538
	Jon	Eagle	THPO	Standing Rock Sioux Tribe	PO Box D, Building #1 North Standing Rock Ave	Fort Yates	ND	58538
	Allysa	White Bull	THPO Staff	Standing Rock Sioux Tribe	PO Box D, Building #1 North Standing Rock Ave	Fort Yates	ND	58538
Chairman	Joseph	Holley	Chairman	Te-Moak Tribe of Western Shoshone	525 Sunset Street	Elko	NV	89801
	Charlotte	Healy	Vice Chairwoman	Te-Moak Tribe - Wells Band of Western Shoshone Indians	PO Box 809	Wells	NV	89835
	Alicia	Aguilar	Tribal Administrator	Te-Moak Tribe - Wells Band of Western Shoshone Indians	1707 Mountain View Drive	Wells	NV	89835
Chairman	Mark	Fox	Chairman	Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation	404 Frontage Road	New Town	ND	58763
	Pete	Coffey	Acting THPO/Compliance Officer	Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation	404 Frontage Road	New Town	ND	58763
Chairman	Jamie	Azure	Chairman	Turtle Mountain Band of Chippewa Indians	PO Box 900	Belcourt	ND	58316
	Jeffrey	Desjarlais, Jr.	THPO	Turtle Mountain Band of Chippewa Indians	PO Box 900	Belcourt	ND	58316
Chairman	Luke	Duncan	Chairman	Ute Indian Tribe of the Uintah & Ouray Reservation	PO Box 190 6964 E 1000 South	Ft. Duchesne	UT	84026
	Betsy	Chapoose	Cultural Rights & Protection Director; NAGPRA Representative	Ute Indian Tribe of the Uintah & Ouray Reservation	PO Box 190 6964 E 1000 South	Ft. Duchesne	UT	84026
Chairman	Manuel	Heart	Chairman	Ute Mountain Ute Tribe	124 Mike Wash Road PO Box JJ	Towaoc	CO	81334
	Mr. Terry	Knight	THPO/NAGPRA Representative	Ute Mountain Ute Tribe	PO Box 468	Towaoc	CO	81334
	Ms. Nichol	Shurack	Cultural Resources Director, Tribal Archaeologist	Ute Mountain Ute Tribe	PO Box 468	Towaoc	CO	81334
Chairman	Michael	Fairbanks	Chairman	White Earth Nation of Minnesota Chippewa	PO Box 418	White Earth	MN	56591
	Jaime	Arsenault	THPO/NAGPRA	White Earth Nation of Minnesota Chippewa	PO Box 418	White Earth	MN	56591
Chairman	Robert	Flying Hawk	Chairman	Yankton Sioux Tribe	Box 1153 800 Main Avenue SW	Wagner	SD	57380
	Kip	Spotted Eagle	THPO	Yankton Sioux Tribe	Box 1153 800 Main Avenue SW	Wagner	SD	57380

Stakeholder Mailing List

Title	First Name	Last Name	Role	Agency/Organization Name	Address	City	State	Zip
Chairman	Kevin	Jensvold	Chairman	Upper Sioux Indian Community	5722 Travers Lane P.O. Box 147	Granite Falls	MN	56241
	Samantha	Odegard	THPO	Upper Sioux Indian Community	5722 Travers Lane P.O. Box 147	Granite Falls	MN	56241
	Fern	Cloud	THPO Assistant	Upper Sioux Indian Community	5722 Travers Lane P.O. Box 147	Granite Falls	MN	56241
	Kristin	Ross	THPO Assistant	Upper Sioux Indian Community	5722 Travers Lane P.O. Box 147	Granite Falls	MN	56241
Non-Governmental Organizations								
				National Trust for Historic Preservation	The Watergate Office Building 2600 Virginia Avenue NW, Suite 1100	Washington	D.C.	20037
				Waterkeeper Alliance	180 Maiden Lane, Suite 603	New York	NY	10038
				Trout Unlimited	1777 N. Kent Street, Suite 100	Arlington	VA	22209
				Ducks Unlimited	One Waterfowl Way	Memphis	TN	38120
				Wilderness Stewardship Alliance	PO Box 752	Bend	OR	97709
				Wilderness Society	1615 M Street NW	Washington	DC	20036
				The Nature Conservancy	4245 North Fairfax Drive, Suite 100	Arlington	VA	22203-1606
				Land Trust Alliance	1250 H Street NW Suite 600	Washington	DC	20005
				Friends of the Souris Loop Refuges				
	Mandy	Wick	President Emeritus	Choteau Chamber of Commerce	P.O. Box 897	Choteau	MT	59422
Mr.	Stan	Rathman	President	Choteau Lions Club	13 1st Ave NW	Choteau	MT	59422
				The Great Falls Area Chamber of Commerce	100 1st Ave N	Great Falls	MT	59401
Mr.	David	Weissman	Committee Chair	Montana Defense Alliance	100 1st Ave N	Great Falls	MT	59401
	Kim	Holzer	President	Judith Basin Chamber of Commerce	P.O. Box 223	Stanford	MT	59479
				Red Dawg Missileers	12th SMS/MS	Malmstrom AFB	MT	
				341st Missile Operations Alumni		Malmstrom AFB	MT	
				usa	PO Box 3096	Bismarck	ND	58502
Mr.	Matt	Shahan	North Dakota State Chairman	Ducks Unlimited	1008 6th St N	Hettinger	ND	58639
Mr.	Larry	Thomas		Chamber Of Commerce	907 Main Ave	Washburn	ND	58577
	Rin	Kasckow	Executive Director	Alliance for Historic Wyoming	P.O. Box 123	Laramie	WY	82073
Ms.	Linda	Fabian	Executive Seceratary	Wyoming State Historical Society	P. O. Box 247	Wheatland	WY	82201
Mr.	Martin	Carollo	State Chairman	Ducks Unlimited-Wyoming	2710 Alamosa Circle	Green River	WY	82935
Mr.	Dwayne	Meadows	Executive Director	Wyoming Wildlife Federation	P.O. Box 1312	Lander	WY	82520
	Sandy	Hoehn	Community Development Director	Goshen Chamber of Commerce and Tourism	2042 Main St	Torrington	WY	82240
Ms.	Shawna	Reichert	Executive Director	Platte County Chamber of Commerce	65 16th St	Wheatland	WY	82201
Mr.	Nate	Farley	State Chairman	Ducks Unlimited-Colorado	Address: (no personal address listed)			
Mr.	Jim	Warner	Executive Director	Association of Air Force Missileers	Post Office Box 652	Johnstown	CO	80534
	Robin	Knox	President and Board Chair	Colorado Wildlife Federation	1580 Lincoln St, Ste 1280	Denver	CO	80203
Mr.	Brock	Baseggio	President	Logan County Chamber of Commerce	109 N Front St	Stanley	CO	80751
	Jaime	Henning	President/CEO	Greeley Area Chamber of Commerce	902 7th Ave	Greeley	CO	80631
Mr.	Michael	Dudzinski	State Chairman	Ducks Unlimited-Nebraska	915 S 205th St	Elkhorn	NE	68022
Mr.	Josh	Enevoldsen	President	Kimball-Banner County Chamber of Commerce	122 S Chestnut St	Kimball	NE	69145
Ms.	Natalie	Jobman	Chairman	Cheyenne County Chamber of	740 Illinois St	Sidney	NE	69162

Page intentionally left blank.

B.7 SAMPLE SCOPING COMMENT REQUEST LETTER FOR LANDOWNERS

Page intentionally left blank.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

October 31, 2020

James D. Hunsicker, GS-15, DAFC
Reply to: Tetra Tech, Inc.
c/o Jennifer Jarvis
10306 Eaton Place
Fairfax, VA 22030
ATTN: GBSD Comments

Dear Community Member

The United States Air Force (Air Force) will prepare an Environmental Impact Statement (EIS) to evaluate the potential impacts on the human and natural environments of deploying the Ground Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) system and decommissioning and disposing of the Minuteman III ICBM system (the Proposed Action). Deployment-related actions would occur both on-base and in the missile fields at Francis E. Warren Air Force Base (AFB), WY; Malmstrom AFB, MT; and Minot AFB, ND. Additional maintenance, training, storage, testing, support, decommissioning, and disposal actions would occur at Hill AFB, UT; the Utah Test and Training Range, UT; Camp Guernsey, WY; and Camp Navajo, AZ. The EIS will be prepared in accordance with the National Environmental Policy Act of 1969 (NEPA) (Title 42 *United States Code* § 4321); the Council on Environmental Quality regulations for implementing NEPA (Title 40 *Code of Federal Regulations* [CFR] Parts 1500–1508); and the Air Force Environmental Impact Analysis Process (EIAP) as codified in 32 CFR Part 989. The Wyoming Army National Guard is a cooperating agency for this EIS.

The scoping period for the GBSD EIS began with publication of the Notice of Intent (NOI) to prepare an EIS in the *Federal Register* on September 25, 2020. Advertisements were also published in local newspapers notifying the public of the EIS scoping period. The scoping process is used to involve the public early in planning and developing the EIS and to help identify issues to be addressed in the environmental analysis. Because of public health concerns surrounding the coronavirus (COVID-19) pandemic, the Air Force will not hold face-to-face public scoping meetings. Instead, scoping materials that would have been presented at the meetings are available for review on the project website at https://www.gbsdeis.com/. On the website, you will find information about the NEPA process, details of the Proposed Action and alternatives, and opportunities for public engagement and providing comments. The website will become accessible the day the NOI is published.

GBSD deployment activities would include replacing all land-based Minuteman III ICBMs in the United States, including motors, interstages, and missile guidance sets, with the GBSD weapon system, a technologically advanced ICBM system. All launch facilities, communication systems, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The Proposed Action would not include generating or disposing of nuclear material, and the number of land-based nuclear missiles would remain unchanged. Decommissioning and disposal activities would include destruction of all Minuteman III weapon systems and associated components to prevent their further use for their originally intended purpose. While certain components and subsystems of the Minuteman III have been upgraded, most of the fundamental infrastructure used today is the nearly 50-year-old original equipment. Deployment of the GBSD system would begin in the mid-2020s, extending the capabilities of the land-based leg of the U.S. nuclear triad through at least 2075.

The purpose of the Proposed Action is to replace all land-based Minuteman III missiles deployed in the continental United States with the GBSD system. The Proposed Action is needed to meet national security requirements and to comply with the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Publ. L. 115-232 § 1663, 132 Stat. 2153), which directs the Air Force to develop and implement a strategy "to accelerate the development, procurement, and fielding of the ground based strategic deterrent program."

The Proposed Action would be consistent with the 2018 Nuclear Posture Review as well as with all relevant international obligations of the United States. Implementing the Proposed Action would ensure the United States continues to have effective, responsive, and resilient ICBMs and associated infrastructure for its land-based nuclear defense. The proposed ICBMs and supporting upgrades would enable the United States to continue to provide long-term tangible evidence to both allies and potential adversaries of our nuclear weapons capabilities, thus contributing to nuclear deterrence and assurance, and providing a safeguard against arms competition.

The EIS will assess the potential environmental consequences of deploying the GBSD weapon system and decommissioning and disposing of the Minuteman III system. The EIS will also analyze the No Action Alternative, which serves as the baseline against which to compare the Proposed Action. Under the No Action Alternative, the Air Force would continue to maintain and operate the Minuteman III weapon system in its current configuration and the GBSD system would not be deployed.

To effectively define the full range of issues and concerns to be evaluated in the EIS, the Air Force is soliciting scoping comments from interested local, state, and federal agencies and organizations; Native American Tribes; and members of the public. Scoping comments can be provided via a comment form on the project website, via email to gbsdeis@tetratech.com, or in writing to Tetra Tech, Inc., c/o Jennifer Jarvis, 10306 Eaton Place, Suite 340, Fairfax, VA 22030, ATTN: GBSD Comments. Although comments will be accepted at any time during the EIAP, the Air Force requests that you provide your comments within 30 days, to ensure their consideration during the preparation of the Draft EIS.

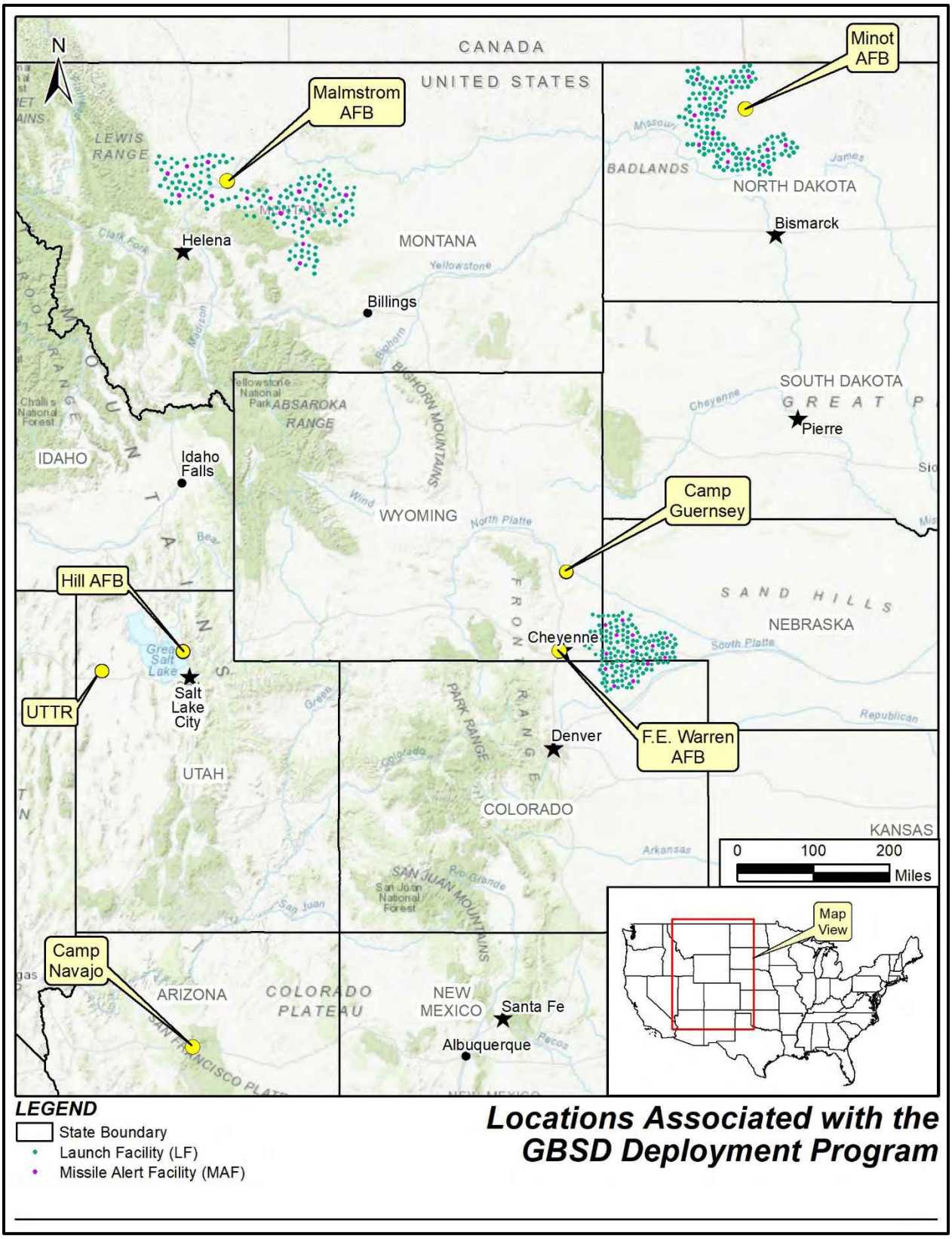
If you are unable to access the website or would like to request digital copies of the scoping materials, please send an email to gbsdeis@tetratech.com.

Thank you for your interest in this project.

Sincerely,

JAMES D. HUNSICKER, GS-15, DAFC
Site Activation Task Force Lead
Air Force Global Strike Command

Attachment:
Locations Associated with the GBSD Deployment Program


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
ABSAROKA RANGE
BIGHORN MOUNTAINS
IDAHO
Idaho Falls
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
PARK RANGE
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

LANDOWNERS CONTACTED

The Air Force has determined that public and private property adjacent to or in close proximity to the missile fields at F.E. Warren AFB, Malmstrom AFB, and Minot AFB had potential be impacted by the proposed action. Owners and managers of these properties were identified as stakeholders in the environmental impact analysis process. Public property landowners and managers were contacted through a scoping comment request letter sent to all government, tribal, and non-government stakeholders. Private property landowners were contacted through individual mailings.

This landowner scoping letter, dated October 31, 2020, was sent via first class mail to 3,655 physical addresses in the United States and three physical addresses in Canada. The Air Force identified a total of 3,683 private property owners that may be effected by the proposed action and continues to identify the remaining physical addresses for those stakeholders.

B.8 SCOPING COMMENTS RECEIVED

Page intentionally left blank.

B.8 Scoping Comments

Affiliation	Comment Submitted Via	Comment
Native American Tribe government representative	Tt email-†gbsdeis@tetratech.com	In response to your request, the above reference project has been reviewed by staff of this office to identify areas that may potentially contain prehistoric or historic archeological materials. The location of your project has been cross referenced with the Comanche Nation site files, where an indication of “No Properties” have been identified. (IAW 36 CFR 800.4(d)(1)). Please contact this office if you require additional information on this project. This review is performed in order to identify and preserve the Comanche Nation and State cultural heritage, in conjunction with the State Historic Preservation Office.
Native American Tribe government representative	Tt email-†gbsdeis@tetratech.com	The Little Shell Tribe of Chippewa Indians of Montana wish to take part in the Section 106 compliance aspects of the proposed GBSD Air-force Updated Missile Defence Project. This proposed undertaking takes place within the traditional homelands of the Little Shell people and there are likely many significant cultural resources within the area of potential effect. Please continue to communicate with us as this project moves forward.
Local government	Tt email-†gbsdeis@tetratech.com	Greetings from the East Slopes of the Rocky Mountains! We here in Choteau, MT are in the middle of the Malmstrom AFB northwestern reaches of the Minuteman III missile area. We are pleased to provide you comment on this process and in conjunction with the City Council, wish to let you know we have no specific issues or concerns for this project. Please know that our doors in Choteau are always open to you as well as to the Officers and Enlisted members of the USAF that come through our town daily. We appreciate their service to our GREAT COUNTRY.
Private citizen	Tt email-†gbsdeis@tetratech.com	I am most interested in making comments about this. I lived at Maelstrom AFB and have read about animals dying and I have personally dealt with Cancer after living there Please, include me.
Business/commercial organization	Tt email-†gbsdeis@tetratech.com	Verendrye Electric Cooperative provides electric service to 40 LFs and 4 MAFs in the 91st missile wing. We support the US AF GBSD program involving the replacement of the ICBM missiles. We do not see any significant environmental impacts due to this program. We would also offer the following suggestion as part of the GBSD program to replace the overhead, OVHD, electrical distribution infrastructure with underground, URD, electrical distribution infrastructure. This would greatly reduce the current environmental impact of serving electrical power to the sites by an overhead electrical distribution system.
Private citizen	Tt email-†gbsdeis@tetratech.com	I am in favor of upgrading our defense system.
State government	Tt email-†gbsdeis@tetratech.com	Camp Navajo is currently permitted under the Arizona Hazardous Waste Management Act as a Post-Closure Facility. The Post-Closure Area is 701 acres and consists of former open burn and open detonation sites. ADEQ requests further information on how missile disassembly/storage will adhere to the restrictions posed by the post closure permit. ADEQ also requests further information on when and how waste determinations will be made during the removal, disassembly, and storage process.
State government	Tt email-†gbsdeis@tetratech.com	It is unclear in the Draft Environmental Impact Statement what the process will be for missile disassembly. Additional information is requested on the process, such as if hazardous components of the missile will be disassembled prior to being stored at Camp Navajo or after arrival at Camp Navajo. ADEQ requests a map showing the locations of storage and disassembly at Camp Navajo, as they are not included in the Draft Environmental Impact Statement.
Elected official	Tt email-†gbsdeis@tetratech.com	Fergus County Montana and the surrounding areas would like to request impact dollars for local infrastructure. Our water and sewer systems, along with the added County road use while construction is in progress will have a major impact on area infrastructure. We would use any proposed dollars for such infrastructure that would also impact the GBSD project. Housing in our area is in short supply, and we are presuming this project will bring families to our area on both a part time and permanent basis. Fergus County is requesting monetary help to provide for the construction of such housing. We as a community want to be proactive and involved in this project to make this a welcoming and successful endeavor for all involved.
State government	Tt email-†gbsdeis@tetratech.com	There are two areas of possible concern as this project moves forward: (1) fugitive emissions (dust) and (2) hazardous air pollutants (asbestos). Concern #1: Dust The Wyoming Air Quality Standards and Regulations (WAQSR) Chapter 3, Section 2(f)(i) and (ii) require the control of fugitive dust emissions by entities engaged in construction activities or handling/transporting materials. Control of dust is typically achieved through frequent watering and/or chemical stabilization of the affected areas and the prompt removal of earth or other materials from paved streets. Water trucks are required for disturbed roadways and dirt areas. If areas of land will be cleared during the project and will then remain untouched for any period of time, the Division recommends that all areas of such cleared land be scarified. Additionally, silt or plastic fencing should be installed as a windbreak near residential areas and local businesses to help protect them from fugitive dust, blowing straw, and construction debris. Particular care should be taken to control dust or debris which may be blown or may billow toward any populated areas, businesses, local residences or housing complexes.
State government	Tt email-†gbsdeis@tetratech.com	Concern #2: Asbestos Specific: Sewer/Water Pipeline Replacement or Removal WAQSR Chapter 3, Section 8 requires asbestos-containing pipelines to be identified, handled and disposed of in a specific manner. Existing pipeline that will be disturbed must be inspected for asbestos in the pipe (sometimes called Transite) and to look for other suspect materials like tar-based coating. If a pipeline to be repaired or replaced contains asbestos and will not be removed intact, or a connection will be made into an existing asbestos-containing pipeline, written notification to the Asbestos Program is required at least ten (10) working days prior to the start of work. Please visit this link for more information: http://deq.wyoming.gov/aqd/asbestos/resources/forms. General Asbestos for other types of projects WAQSR Chapter 3, Section 8 requires public and commercial facilities to be inspected for the presence of asbestos in the area where the project will occur, prior to any renovation or demolition activity. The inspection must be performed by a trained Asbestos Building Inspector. Written notification to the Asbestos Program is required at least ten (10) working days prior to the removal of most asbestos-containing material and prior to the start of all demolition projects whether asbestos is present or not. Please visit this link for more information: http://deq.wyoming.gov/aqd/asbestos.

Affiliation	Comment Submitted Via	Comment
State government	Tt email-†gbsdeis@tetratech.com	WDEQ/WQD is responsible for the protection and restoration of the quality of waters of the state and is providing the following comments to help facilitate the review of potential impacts to water quality and ensure that the project adheres to Wyoming's Water Quality Rules and Regulations. Potential impacts to surface water and groundwater quality are primarily associated with the storage and usage of chemicals, petroleum products, and other pollutants while the sites have been operational, as well as during site construction or decommissioning. These include firefighting foams, hydrocarbon-based building sealants, and other materials. In addition, construction activities have the potential to impact surface waters via erosion and sedimentation. As such, WDEQ would like to highlight the following requirements associated with Wyoming's Water Quality Rules and Regulations that may be applicable to the analysis of potential impacts to the project: The Environmental Impact Statement (EIS) should describe the procedures to be implemented to investigate each potential source of contamination onsite for releases or exposure of contaminants to soil and groundwater. Where a release or exposure has been identified it must be reported to the WDEQ, investigated, and remediated as required by WDEQ, and in accordance with WDEQ rules and regulations. Wyoming Water Quality Rules and Regulations, Chapter 4, requires that the WQD be notified of any oil or hazardous substances which have been released to the environment. The EIS should explain how groundwater and surface waters will be protected from the accidental release of chemicals, petroleum products, and any other hazardous substances during de-commissioning. The Wyoming Pollutant Discharge Elimination System (WYPDES) Program regulates discharges into surface waters of the state, consistent with Wyoming's Water Quality Rules and Regulations, Chapter 2, Permit Regulations for Discharges to Wyoming Surface Waters. A WYPDES permit is required for temporary discharges to surface waters from activities such as construction dewatering, disinfection of potable water lines, and/or hydrostatic testing of pipes, tanks, or other similar vessels. Additional information is available: http://deg.wyoming.gov/wgd/discharge-pennitting/. A WYPDES permit is also required for storm water discharges resulting from all construction activities that cumulatively disturb one or more acres. Coverage under the WYPDES Large Construction General Permit is required for construction activities that cumulatively disturb five or more acres, and a Small Construction General Permit is required for construction activities that cumulatively disturb between one and five acres. Additional information is available: http://deg.wyoming.gov/wgd/ storm-water-permitting/.
State government	Tt email-†gbsdeis@tetratech.com	After reviewing the information on the website, www.gbsdeis.com it appears that the proposed actions associated with the Malmstrom Air Force Base and surrounding launch facilities and missile alert facilities may have potential impacts to MDT facilities within the Great Falls and Billings Districts. The installation of approximately 761 miles of underground utilities, property easements, creation of several construction staging areas and establishment of a workforce housing camp all have potential to impact MDT facilities depending on their proposed locations. Permits are required for any encroachment, utility installation or approach to MDT facilities or right-of-way.
Federal government	Tt email-†gbsdeis@tetratech.com	The Service has responsibility for the conservation and management of fish and wildlife resources for the benefit of the American public under the following authorities: 1) Endangered Species Act; 2) Fish and Wildlife Coordination Act; 3) Bald and Golden Eagle Protection Act; and 4) Migratory Bird Treaty Act. Below we provide our comments under these authorities relative to the off-base elements of the GBSD deployment activities (https://www.gbsdeis.com/stations-locations/project-locations/fe-warren-afb-and-camp-guernsey) located in Banner, Cheyenne, and Kimball counties in Nebraska.
Federal government	Tt email-†gbsdeis@tetratech.com	ENDANGERED SPECIES ACT Pursuant to section 7(a)(2) of the Endangered Species Act (ESA), every federal agency, shall in consultation with the Service, ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a federally listed species or result in the destruction or adverse modification of federally designated critical habitat. If a proposed project may affect federally listed species or federally designated critical habitat, section 7 consultation is required.
Federal government	Tt email-†gbsdeis@tetratech.com	Platte River DepletionsIt was unclear to the Service if the proposed activities would create new or increased depletions to the Platte River system. The Platte River, its tributaries, and associated wetland habitats are resources of national and international importance for the human and natural environments. Due to the cumulative effect of many water depletion projects in the Platte River basin, the Service considers any direct or indirect depletion of flows from the Platte River system to be significant and will continue to further deteriorate the already stressed habitat conditions. Because the proposed activities are located in the North Platte River and South Platte River basins, the Service is concerned that the activities should be assessed to ensure they do not result in an instream flow depletion(s) that could indirectly impact the federally listed species and designated critical habitat in the central and lower Platte River basins. The federally listed species that could be impacted include the federally endangered Whooping Crane (Grus americana), Interior Least Tern (Sternula antillarum), and Pallid Sturgeon (Scaphirhynchus albus); and the threatened Piping Plover (Charadrius melodos) and Western Prairie Fringed Orchid (Platanthera praeclara). The central and lower Platte River basins provided suitable habitat for these federally listed species. Additionally, a three-mile-wide and 56-mile-long reach the central Platte River between Lexington and Denman, Nebraska is federally designated as critical habitat for the endangered Whooping Crane (as published in the May 15, 1978, Federal Register [43 FR 20938]). The Service recommends the USAF first determine if the proposed project will require water extraction (e.g., for road construction or maintenance) from the North Platte River or South Platte River basins. If it is determined that the proposed project will require water extraction from these basins, we then recommend the USAF contact the Service for additional information regarding the administrative steps necessary to conclude section 7 consultation process. There is also guidance available on our office's webpage regarding the Platte River Recovery Implementation Program (http://fws.gov/platteriver) that can be reviewed prior to contacting the Service. Open this webpage and under "Nebraska Water Users," select the "Guidance for Water-Related Projects in Nebraska" hyperlink.
Federal government	Tt email-†gbsdeis@tetratech.com	ESA-Recovered Species in Project Area The Colorado Butterfly Plant (Oenothera coloadensis) is a former federally listed threatened species that was listed due to threats including non-selective herbicide spraying, haying and mowing schedules that inhibit the setting of seed, land conversion for cultivation and subdivision, and competition from noxious weeds. This species is a short-lived perennial herb of the evening primrose family. It typically grows within the floodplains of meandering stream channels in riparian wetlands with relatively open and not overly dense or overgrown vegetation between elevations of 5,000 and 6,400 feet. In Nebraska, known populations of this species occur along Lodgepole Creek and at Oliver Reservoir State Park Recreation Area in the panhandle in southwestern Kimball County. No federally designated critical habitat occurs in the state. On November 5, 2019, this species was delisted from the ESA due to recovery. While this species has been delisted, it is actively being monitored for the next five years to ensure full recovery. This is being done in accordance to the Service's Final Post-Delisting Monitoring Plan for the Colorado Butterfly Plant (Oenothera coloradensis formerly Guara neomexicana subsp. coloradensis) dated March 2019. A copy of this plan can be found at https://www.fws.gov/mountain-prairie/es/Library/Final_Post-Delisting_MP_CO-Butterfly-Plant.pdf. The Service recommends reviewing the guidance provided in this plan prior to project implementation to ensure that the proposed activities associated with the construction of localized housing for workers in Kimball County and the replacement of the existing missile technology do not hinder the recovery of the Colorado Butterfly Plant.
Federal government	Tt email-†gbsdeis@tetratech.com	State-listed Fish and Wildlife Resources All federally listed species under the ESA are also state-listed under Nongame and Endangered Species Conservation Act. There are also state-listed species that are not federally listed. To determine if the proposed project may affect state-listed species, the Service recommends that the USAF contact the Nebraska Game and Parks Commission (NGPC) located at 2200 North 33rd Street Lincoln, Nebraska 68503-0370.

Affiliation	Comment Submitted Via	Comment
Federal government	Tt email-†gbsdeis@tetratech.com	Fish and Wildlife Coordination Act The Fish and Wildlife Coordination Act (FWCA) requires consultation with the Service and state fish and wildlife agency, the NGPC, for the purpose of giving equal consideration to fish and wildlife resources in the planning, implementation, and operation of federal and federally funded, permitted, or licensed water resource development projects. The FWCA requires that federal agencies take into consideration the effect that water related projects may have on fish and wildlife resources, to take action to avoid impact to these resources, and to provide for the enhancement of these resources. The Service will provide FWCA comments pursuant to a permit application. The Service recommends that impacts to wetlands, streams, and riparian areas be avoided or minimized in accordance with the Section 404(b)(l) Guidelines of the Clean Water Act (Guidelines). For projects that do not require access or proximity to or within aquatic environments (i.e., non-water dependent project) to fulfill its basic project purpose, it is assumed that practicable alternatives exist that would cause less damage to aquatic resources than projects that are located in aquatic ecosystems. In addition to determining the least environmentally damaging practicable alternative, 40 CFR § 230.1 0(a) of the Guidelines also states," ... no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences."
Federal government	Tt email-†gbsdeis@tetratech.com	Migratory Bird Treaty Act It is likely that some the off-base elements of the GBSD deployment will likely impact migratory birds to some degree. The degree to which each element will impact migratory birds depends on both the location and nature of the activities. The Service's concern is with the elements that will require the removal of suitable migratory bird nesting habitat, especially habitat bearing active nests (a nest with viable eggs or young present). In the proposed project area, there are native shortgrass and mixed prairies, and wetlands present.
Federal government	Tt email-†gbsdeis@tetratech.com	Birds of Conservation Concern (BCC) The Service's document titled Birds of Conservation Concern dated December 2008 (https://www.fws.gov/migratorybirds/pdf/management/BCC2008.pdf), is our agency's effort to identify species and populations of all migratory nongame birds, that without additional conservation actions, are likely to become candidates for listing under the ESA. Banner, Kimball, and Cheyenne counties in Nebraska occur in Bird Conservation Region 18, the Shortgrass Prairie. There are at least 11 of the 16 BCC-listed birds in this region likely to occur in the project area that could be impacted by the off-base elements of the GBSD deployment. These species include the Burrowing Owl (Athene cunicularia), Cassin's Sparrow (Aimophilia cassinii), Chestnut-collared Longspur (Calcarius ornatus), Golden Eagle (Aquila chrysaetos), Lark Bunting (Calamospiza melanocorys), Lesser Yellowlegs (Tringa flavipes), Long-billed Curlew (Numenius americanus), Mccown's Longspur (Calcarius mccownii), Mountain Plover (Charadrius montanus), Willet (Tringa semipalmata), and the Willow Flycatcher (Emidonax traillii). A top stressor identified in Nebraska's Shortgrass Prairie Ecoregion is the conversion and fragmentation of natural habitats (Schnieder et al. 2011). The Service recommends impacts to native grassland and wetlands in the Shortgrass Prairie Region be avoided to the greatest extent practicable. If impacts cannot be avoided, please contact our office for more guidance.
Federal government	Tt email-†gbsdeis@tetratech.com	Bald and Golden Eagle Protection Act Bald Eagles (Haliaeetus leucocephalus) are year-round residents in Nebraska and winter and nest throughout the state. As for Golden Eagles (Aquila chrysaetos), they are found in the Sandhills, Southwestern, and Panhandle regions of Nebraska. Golden Eagles winter in the Sandhills and Southwestern regions of the state and nest in the Panhandle Region includes the proposed project area on buttes and canyons adjacent to open grassland where they forage. Also, in this region, some Golden Eagles are permanent year-round residents in the Pine Ridge area. Both eagle species may be impacted by the proposed activities. The bald eagle and golden eagle are protected from a variety of harmful actions via take prohibitions in both the Migratory Bird Treaty Act1 (MBTA; 16 U.S.C. 703-712) and the Bald and Golden Eagle Protection Act (BGEPA; 16 U.S.C. 668–668d). The BGEPA, enacted in 1940 and amended several times, prohibits take of bald and golden eagles, including their parts, nests, young or eggs, except where otherwise permitted pursuant to federal regulations. Incidental take of eagles from actions such as electrocutions from power lines or wind turbine strikes are prohibited unless specifically authorized via an eagle incidental take permit from the Service. The BGEPA provides penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." BGEPA also defines take to include the following actions: "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." The Service expanded this definition by regulation to include the term "destroy" to ensure that "take" also encompasses destruction of eagle nests. Also, the Service defined the term "disturb" which means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. The Service has developed guidance for the public regarding means to avoid take of bald and golden eagles. Our 2007 National Bald Eagle Management Guidelines (https://www.fws.gov/northeast/ecologicalservices/pdf/NationalBaldEagleManagementGuideline s.pdf) serve to advise landowners, land managers, and others who share public and private lands with bald eagles when and under what circumstances the protective provisions of BGEPA may apply. These guidelines provide conservation recommendations to help people avoid and/or minimize such impacts to bald eagles, particularly where they may constitute "disturbance," which is prohibited by the BGEPA. To comply with the BGEPA, it is recommended that the USAF determine whether impacts to both eagle species would occur. If it is determined that impacts will occur and cannot be avoided, we recommend contacting both the Service and the NGPC for further guidance or survey protocols.
State government	Tt email-†gbsdeis@tetratech.com	Endangered and Threatened Species This proposed project area is within the range of the state-listed endangered Colorado Butterfly Plant (Guara neomexicana ssp. coloradensis) and Swift Fox (Vulpes velox); and the state-listed threatened Mountain Plover (Charadrius montanus).
State government	Tt email-†gbsdeis@tetratech.com	Colorado Butterfly Plant This species seeds germinates in the late summer or autumn. The following summer one or more upright stems grow up to three feet tall and produce flowers in mid to late summer. The flowers are less than an inch wide and open in the evening, suggesting a nocturnal pollinator. This plant prefers low meadows and stream edges. Flooding, grazing and habitat destruction are all threats to this plant. This species is state endangered.
State government	Tt email-†gbsdeis@tetratech.com	Swift FoxThe swift fox is the smallest of the North American canines and utilizes burrows more than any other canine. This species utilizes a variety of habitats but uses fairly level upland grasslands for burrows and den sites. Swift fox uses many burrows during the year, but it is typically tied to an individual burrow during the denning season, which in Nebraska is from April through August. If construction activity will be occurring in suitable habitat during the denning season, a survey for swift fox dens should be conducted by a qualified biologist, prior to construction. Results of the survey should be sent to the Nebraska Game and Parks Commission to determine if actions are needed to avoid impacts to the swift fox.

Affiliation	Comment Submitted Via	Comment
State government	Tt email-†gbsdeis@tetratech.com	Mountain Plover Mountain Plovers are a state-listed (Threatened) species that inhabits heavily-disturbed short-grass prairie habitat in Kimball, southern Banner, and western Cheyenne Counties. Mountain Plovers inhabit relatively level, upland, topography or “tablelands” in the southwestern Panhandle. Mountain Plovers nest in agricultural fields, prairie-dog colonies, and other disturbed or intensively-grazed short-grass habitats. Nearly all areas where Mountain Plover may have traditionally nested have been converted to agriculture. As a result, nearly all nesting now occurs in agricultural fields. Breeding generally occurs from 1 April through 31 July, with primary nesting activity occurring from 1 April through 15 June. Most birds have left Nebraska by mid-August. If any construction activity will be occurring in short-stature grasslands (vegetation < 6 inches in height) or in fallow farm fields during this time period, a survey for mountain plover nests needs to be conducted by a qualified biologist prior to construction. Joel Jorgensen, at NGPC, can be contacted for recommended mountain plover survey protocols. Results of the survey should be sent to the Nebraska Game and Parks Commission to determine if actions are needed to avoid impacts to the mountain plover.
State government	Tt email-†gbsdeis@tetratech.com	Bald and Golden Eagle Protection Act The federal Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668c) provides for the protection of the bald eagle (Haliaeetus leucocephalus) and golden eagle (Aquila chrysaetos). Under the Eagle Act, “take” of eagles, their parts, nests or eggs is prohibited without a permit issued by the Secretary of the Interior. Disturbance resulting in injury to an eagle or a decrease in productivity or nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior is a form of “take.” Bald eagles use mature, forested riparian areas near rivers, streams, lakes, and wetlands and occur along all the major river systems in Nebraska. The bald eagle southward migration begins as early as October and the wintering period extends from December-March. Additionally, many bald and golden eagles nest in Nebraska from mid-February through mid-July. Disturbances within 0.5-miles of an active nest or within line-of-sight of the nest could cause adult eagles to discontinue nest building or to abandon eggs. Both bald and golden eagles frequent river systems in Nebraska during the winter where open water and forested corridors provide feeding, perching, and roosting habitats, respectively. The frequency and duration of eagle use of these habitats in the winter depends upon ice and weather conditions. Human disturbances and loss of wintering habitat can cause undue stress leading to cessation of feeding and failure to meet winter thermoregulatory requirements. These affects can reduce the carrying capacity of preferred wintering habitat and reproductive success for the species.
State government	Tt email-†gbsdeis@tetratech.com	Under the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712: Ch 128 as amended) construction activities in grassland, wetland, stream, and woodland habitats that would otherwise result in the taking of migratory birds, eggs, young, and/or active nests should be avoided. The primary nesting season for migratory birds is from April 1 to July 15. However, some species of migratory birds are known to nest outside of this period. Construction activities that involve vegetation removal should be scheduled to avoid impacting migratory bird nesting. If this is not feasible, then a survey will be needed. The U.S. Fish and Wildlife Service, Ecological Services Office in Wood River can be contacted for information on how to avoid the unnecessary take of migratory birds.
State government	Tt email-†gbsdeis@tetratech.com	Biologically Unique Landscape (BUL) § Kimball Grasslands and Wildcat Hills Kimball Grasslands occupies level to rolling hills and breaks of southwest Kimball County. Most level ground is in dry-land crops, primarily wheat. Native mixed-grass prairie still occupies the shallow-soiled breaks bordering Lodgepole Creek and other stream valleys. The landscape is unique in that it supports the state’s only population of the state-listed Colorado butterfly plant, within the Lodgepole Creek valley. The state-listed mountain plover nests in heavilygrazed native grasslands and cropland such as short wheat stubble. Playa wetlands are found on level plains in the northern portion of the BUL. The Wildcat Hills is a rocky escarpment that rises several hundred feet on the south side of the North Platte River in Scotts Bluff, Banner, and Morrill counties. The escarpment is composed primarily of sandstone, siltstone, and volcanic ash. The north bluff of the escarpment is steep and deep canyons cut into the bluff. The canyons support stands of mountain-mahogany, eastern red-cedar and Rocky Mountain juniper. The north-facing slopes of the escarpment support Ponderosa pine woodlands. Mixed-grass prairie, rock outcrops, and scattered patches of sandsage prairie occupy the remainder of the Wildcat Hills. The Wildcat Hills are significant in supporting an intact mosaic of pine woodlands and mixed-grass prairie and the largest stands of mountain-mahogany shrubland in the state. The Wildcat Hills are also home to one of three Rocky Mountain bighorn sheep opulations in the state. Protected lands within the Wildcat Hills include Scotts Bluff National Monument; Platte River Basin Environment’s Bead Mountain, Carter Canyon, and Montz ranches; The Nature Conservancy’s Murphy Ranch; and the Nebraska Game and Park Commission’s Cedar Canyon and Buffalo Creek Wildlife Management Areas and Wildcat Hills State Recreation Area.
State government	Tt email-†gbsdeis@tetratech.com	This information is being provided based on a review of the material you sent, aerial photographs, and our Nebraska Natural Heritage Database. Please note this correspondence does not satisfy requirements of Neb. Rev. Stat. §37-807 (3) of the Nongame and Endangered Species Conservation Act. Under authority of Neb. Rev. Stat. §37-807 (3), all Nebraska state agencies are required to consult with the Commission to ensure any actions authorized, funded or carried out by them do not jeopardize the continued existence of a state listed species. This requirement would extend to any permit issued or authorized by a state agency.
State government	Tt email-†gbsdeis@tetratech.com	The proposed project map identifies an area of Nebraska where several State Recreation (SRA) and State Wildlife Management Areas (WMA) can be found. These include Williams Gap WMA, Buffalo Creek WMA, Cedar Canyon WMA, Montz Point WMA, and Wildcat Hills SRA. It is not certain based on the information provided to determine if or what impacts may occur. We would recommend further consultation if it is determined that activities related to this proposal may occur near any of the NGPC properties listed above.
State government	Tt email-†gbsdeis@tetratech.com	In general, NGPC has concerns for impacts to wetlands, streams and riparian habitats. We recommend that impacts to wetlands, streams, and associated riparian corridors be avoided and minimized, and that any unavoidable impacts to these habitats be mitigated. If any fill materials will be placed into any wetlands or streams as a result of the proposed project, the U.S. Army Corps of Engineers should be contacted to determine if a 404 permit is needed.
State government	Tt email-†gbsdeis@tetratech.com	For construction activities near waterways, we recommend that appropriate sediment and erosion control methods be established during and after construction to prevent increased sediment input into the aquatic system in order to avoid impacting aquatic species and habitat. Care should be taken to avoid the input of contaminants into waterways during construction, such as construction byproducts, petroleum products, and other contaminants from equipment. Areas disturbed during construction should be re-seeded with a mix of native grasses and forbs appropriate for the area, while avoiding the use of invasive or exotic vegetative species.
State government	Tt email-†gbsdeis@tetratech.com	All waste generated or discovered on site must be properly handled, contained, and disposed as per all applicable regulations found in NE Title 128 - Nebraska Hazardous Waste Regulations and NE Title 132 - Integrated Solid Waste Management Regulations. This includes proper waste determinations and characterization before disposal. Where possible, please try to recycle or reuse materials. USAF Representatives are already in contact with the Waste Compliance Section for more in depth waste disposal compliance assistance.

Affiliation	Comment Submitted Via	Comment
State government	Tt email-†gbsdeis@tetratech.com	If there is any wastewater works construction associated with this project in Nebraska, a Title 123 construction permit may be required. The only exceptions will be for those activities included in Chapter 3, Section 002 of Title 123. Any existing sanitary manholes, sanitary sewers, or other wastewater works as defined in Chapter 1 of Title 123 that are disturbed during construction must be returned to their original condition or a Title 123 permit may be required.
State government	Tt email-†gbsdeis@tetratech.com	Construction Storm Water: Since the project could possibly disrupt ground during the decommissioning process, the Department recommends utilizing silt fence or other best management practice (BMP) to control runoff. The project would not require a construction storm water (CSW) General Permit (GP) since there is no construction activity. These silos could contain water seepage due to years of deterioration. The Department would require a NPDES permit to discharge or water would need to be hauled away for appropriate treatment.
State government	Tt email-†gbsdeis@tetratech.com	The project will be required to comply with § 401 of the Clean Water Act of 1977, as amended by the Water Quality Act of 1987, and Nebraska Titles 120 and 117. Wetland and stream impacts may occur in this project. If the project will result in a possible discharge of dredge and fill material into federally jurisdictional waters, a 404 Permit from US Army Corps of Engineers, 401 Water Quality Certification from NDEE, and compensatory mitigation may be required. It is recommended that during the project planning phase the applicant contact the Section 401 Program Coordinator at NDEE to discuss the project to ensure that it will not violate Nebraska Title 117 Water Quality Standards for Wetlands. The project is located within several Wellhead Protection (WHP) areas, check with your local towns to see if they have ordinances within their WHP boundaries.
Federal Government	Gov Email afgsc.gbsd.impactstudy@us.af.mil	The USGS has no comment at this time.
Federal Government	Gov Email afgsc.gbsd.impactstudy@us.af.mil	The designated alignments of several National Historic Trails cross through (or near) some of the proposed project areas. These are nationally significant, Congressionally-designated historic resources with potential to be impacted by deployment relatedmaintenance, training, storage, testing, and support actions.The designated alignment of the California National Historic Trail (NHT) passes through the southwest portion of the Utah Test and Training Range (North). The portion of the alignment that passes through UTTR is a high potential segment, known as the Grantsville to Franklin River Crossing segment. A high potential route segment is defined in the National Trails System Act as a segment “of a trail which would afford high quality recreation experience in a portion of the route having greater than average scenic values or affording an opportunity to vicariously share the experience of the original users of a historic route” (P.L. 90-543, as amended through P.L. 116-9, March 12, 2019). The designated alignment of California NHT also runs along the west side of Hill Air Force Base, south of Ogden, UT.The designated alignments of California NHT, Mormon Pioneer NHT, Oregon NHT, and Pony Express NHT cross the boundaries of Camp Guernsey Joint Training Center (South) in Wyoming. These trail alignments include portions of the Fort Laramie to Warm Springs high potential segment.Within the boundaries of Camp Guernsey (South) are two high potential sites. High potential sites are defined in the National Trails System Act as "those historic sites related to the route, or sites in close proximity thereto, which provide opportunity to interpret the historic significance of the trail during the period of its major use" (P.L. 90-543, as amended through P.L. 116-9, March 12, 2019). The high potential sites are the Guernsey Ruts, a National Historic Landmark, and Warm Springs Canyon. The National Park Service and the Wyoming Army National Guard have collaborated to develop interpretive wayside exhibits for trail resources at several locations in this area. The California NHT also travels through the boundaries of Camp Guernsey (North). There are no high potential sites or segments associated with this area. We are happy to provide geospatial data for the National Trail alignments at your request. As federal trail administrators, we would like to be a consulting party under Section 106 and ask tobe included on your contact list for further reviews in the NEPA process.
Business/commercial organization	Gov Email afgsc.gbsd.impactstudy@us.af.mil	The electric cooperatives that service ICBM silos are working to identify and take the steps necessary to prepare for associated upgrades necessary to support GBSD in future years. Though a lot of the details and plans are still being developed, including the awarding of the DoD contract for the transition, electric cooperatives seek to engage early to ensure they can prepare for future changes. Planning and accounting for the replacing or enhancing of electrical infrastructure for the missile sites is necessary as DoD continues to plan for the transition from the ICBM to the GBSD programs. Any costs borne by the cooperatives to replace electric infrastructure would be socialized among the cooperatives’ member-consumers. National defense is a common good and as such the costs of protecting our country should be shared among the entire country through federal dollars, not just cooperative members. As stakeholders who must consider the needs of all their consumer-members, along with their goal to maintain and supply reliable, secure, resilient, and affordable electricity, electric cooperatives should be included in DoD’s planning as a key resource and implementation partner.
Private citizen	Tt Physical address in Fairfax, VA	I am writing regarding the GBSD project being planned for the Minot Air Force Base in Minot, North Dakota. Investors Management & Marketing (IMM) is a property management company based out of Minot, ND operating over 5000 apartment units throughout North Dakota with close to 3000 apartment units in Minot, North Dakota as well as commercial property and storage units. In the research that I have done I have seen the potential for a workforce housing camp being utilized to house the workers and support personnel for 2-5 years during construction of the facilities. I would like to recommend looking at the apartments available in the City of Minot as a more stable option with the ability to offer a much more quality of life offering than workforce housing would be able to offer. At IMM we offer a wide range of pricing and amenities to meet our residents needs and wants. The City of Minot also offers a wide range of dining and shopping opportunities to its citizens and guests. IMM would love the opportunity to help these contractors with their housing needs. If there are any special requirements of IMM to be part of this in any way, please let me know. My contact information is below, and I look forward to watching this project take place and hope that IMM can be a part of making it as successful as possible.
Native American Tribe government representative	Tt Physical address in Fairfax, VA	Public Scoping Comment Form. All topic area boxes checked. No comments provided other than attached song lyrics.
State government	Tt Physical address in Fairfax, VA	The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.
State government	Tt Physical address in Fairfax, VA	3. All necessary measures must be taken to minimize the disturbance of any asbestos-containing material and to prevent any asbestos fiber release episodes. Any facility that is to be renovated or demolished must be inspected for asbestos. Notification of the department's Division of Waste Management (701-328-5166) is required before any demolition. Removal of any friable asbestos-containing material must be accomplished in accordance with section 33.1-15-13-02 of the North Dakota air pollution control rules.

Affiliation	Comment Submitted Via	Comment
State government	Tt Physical address in Fairfax, VA	4. All solid waste materials must be managed and transported in accordance with the state's solid and hazardous waste rules. Appropriate efforts to reduce, reuse and/or recycle waste materials are strongly encouraged. As appropriate, segregation of inert waste from non-inert waste can generally reduce the cost of waste management.
State government	Tt Physical address in Fairfax, VA	The North Dakota Department of Environmental Quality has reviewed the information concerning the above-referenced project received at the department on September 29, 2020 with respect to possible environmental impacts. This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. With respect to construction, we have the following comments:
State government	Tt Physical address in Fairfax, VA	1. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.
State government	Tt Physical address in Fairfax, VA	2. Projects disturbing one or more acres are required to have a permit to discharge stormwater runoff until the site is stabilized by the reestablishment of vegetation or other permanent cover. Further information on the stormwater permit may be obtained from the department's website or by calling the Division of Water Quality (701-328-5210). Also, cities may impose additional requirements and/or specific best management practices for construction affecting their storm drainage system. Check with the local officials to be sure any local stormwater management considerations are addressed.
State government	Tt Physical address in Fairfax, VA	The proposed project has been reviewed by State Water Commission staff, and the following comments are provided: - The OSE and Water Resource Districts are responsible for regulating drainage in North Dakota. The OSE is also responsible for regulating the construction and modification of any dike, levee, or other device capable of obstructing or diverting more than 50 acre-feet of water. Consequently, the OSE requests to be notified regarding a proposed project's impacts, if any, to water resources, such as watercourses (i.e. streams or rivers), agricultural drains, and wetlands (i.e. ponds, sloughs, lakes, or any series thereof), and dikes, levees, and other water control devices, as any alterations, modifications, improvements, or impacts to those may require a drainage permit(s) or a construction permit(s) from the OSE.
State government	Tt Physical address in Fairfax, VA	Initial review indicates the project does not require a conditional or temporary permit for water appropriation. However, if surface water or groundwater will be diverted for construction of the project, a water permit will be required per North Dakota Century Code § 61-04-02.
Private citizen	Tt Physical address in Fairfax, VA	b. Disruptions upon livestock, wildlife and habitat
Private citizen	Tt Physical address in Fairfax, VA	c. Disruptions upon soil and vegetation resulting in large increases in growth of noxious weeds
Private citizen	Tt Physical address in Fairfax, VA	d. Possible increases in helicopter activity near sites would also contribute to the above mentioned disruptions.
Private citizen	Tt Physical address in Fairfax, VA	P.S. Outside scope of EIS: The total number of missiles/warheads is excessive.
Private citizen	Tt Physical address in Fairfax, VA	2. Strategies are needed to mitigate the above disruptions, perhaps spreading the work over the entire project area (over a longer time period) with smaller groups of workers at any one site at any one time instead of a massive influx all at once at a particular site.
Private citizen	Tt Physical address in Fairfax, VA	e. It would be expected that such a large project would be accompanied by a related increase in crime, which would place significantly more pressure on local law enforcement.
Private citizen	Tt Physical address in Fairfax, VA	Re: EIS Scoping for GBSD Project (Esp. area near Malmstrom AFB) 1. The large amount of construction activity, large housing camps, and large staging areas will all be a major disruption upon the daily life of local residents: a. Major disruptions of road traffic patterns
Native American Tribe government representative	Tribal Meetings	Will areas of tribal significance on-base be handled as part of this process?
Native American Tribe government representative	Tribal Meetings	It is important to avoid impacts on known historic properties and/or sites/areas of tribal significance.
Native American Tribe government representative	Tribal Meetings	How will reclamation will be managed within the areas of ground disturbance? Will the Air Force be reseeding or taking plant material for restoration along the utility corridors?
Native American Tribe government representative	Tribal Meetings	The Tribe does not consider resources such as air, land, water, and noise separately but collectively with natural resources and should be approached from a cultural landscape perspective.
Native American Tribe government representative	Tribal Meetings	The Programmatic Agreement should reference the Native American Graves Protection and Repatriation Act, note how discoveries of historical items will be handled, and include the development of Comprehensive Agreements for implementation.
Native American Tribe government representative	Tribal Meetings	She does not want site dissection to be part of the process for determining whether sites are eligible or ineligible. There should be a landscape level of analysis for evaluating sites, they should not be evaluated separately.
Native American Tribe government representative	Tribal Meetings	Do any of the older buildings have asbestos issues?
Native American Tribe government representative	Tribal Meetings	Are there any issues with missiles that are unexploded?
Native American Tribe government representative	Tribal Meetings	She asked how confidentiality will be handled for comments related to areas of significance. She asked how they will know if sensitive information shared in tribal scoping meetings will either be kept confidential, or, if minimal information is shared in the meetings because of concerns about confidentiality, that it will be enough information to address an issue affecting the decision. There is recognition that agencies should address confidentiality as specified in 36 CFR § 800.11.c.
Native American Tribe government representative	Tribal Meetings	He noted that Shoshone-Bannock Tribes are most concerned about their sacred sites.

Affiliation	Comment Submitted Via	Comment
Native American Tribe government representative	Tribal Meetings	He mentioned that Section 106 is not broad enough and does not include all the Tribe's concerns. He stated that Section 106 is vague from the Tribe's perspective.
Native American Tribe government representative	Tribal Meetings	She is pleased that Tribes are being consulted early, and that Tribal input is important in the development of the project. She noted that Tribes are interested in preserving all native lands. Ms. Reynolds stated further that she appreciates the Air Force's effort to reach out to Tribes as part of this project.
Native American Tribe government representative	Tribal Meetings	He commented that the proposed project includes many miles of utility corridors and that the Air Force is taking the right steps to manage impacts. He said that it is impressive how advanced the Air Force has become in minimizing affected areas.
Native American Tribe government representative	Tribal Meetings	She expressed concerns regarding the limitations of the Section 106 process, and she appreciated the early notification. She noted that Tribes have inherent knowledge of the environment. Ms. Smith stated that she will coordinate with the Tribe's NEPA specialist on the discussions they had during this call. Ms. Smith stated further that she appreciates that the Air Force is following the Section 106 strategy, and that she considers landscapes to be sacred sites.
Native American Tribe government representative	Tribal Meetings	Concerns were expressed regarding past archaeological surveys of missile fields and potential utility corridors
Native American Tribe government representative	Tribal Meetings	She asked if all these facilities were constructed prior to NEPA and without tribal consultation, and if the missile sites for this project will be surveyed with Tribal participation.
Native American Tribe government representative	Tribal Meetings	She would need to know about all prior impacts before a tribal survey. This information is important to Tribes to help understand what kind of development happened in the past and what resources could have been disturbed.
Native American Tribe government representative	Tribal Meetings	She is concerned not only about cultural areas already identified, but also about resources that have not yet been discovered.
Native American Tribe government representative	Tribal Meetings	She emphasized the importance of data sharing, e.g., the hyperspectral and other data collected by the Air Force, to enable Tribes to conduct their own analysis of past and future impacts to Tribal areas.
Native American Tribe government representative	Tribal Meetings	She asked what the upgrades at the launch facilities will consist of to address the water intrusion and rust. She inquired if the launch facilities would have to be dug up and if some of the disturbed areas will be restored.
Native American Tribe government representative	Tribal Meetings	She asked if any of the Missile Alert Facilities (MAFs) that will be decommissioned will be restored to open land or prairie, or if they will still be used for military purposes
Native American Tribe government representative	Tribal Meetings	She asked if tribal monitors would be involved in the field surveys of the utility corridors. She mentioned reaching out to all Tribes, and she specifically noted the Fort Berthold Tribes because utility corridors would be on their land.
Native American Tribe government representative	Tribal Meetings	She asked if any of the areas planned for development had any significant finds for cultural resources.
Native American Tribe government representative	Tribal Meetings	She suggested that the use of tribal monitors for conducting surveys would be important for analyzing sites for their spiritual significance as well as their scientific importance. She expressed concern for protection of historic properties and areas of significance to Tribes.
Native American Tribe government representative	Tribal Meetings	She asked what activities would occur at the Utah Test and Training Range.
Native American Tribe government representative	Tribal Meetings	She expressed concerns about nuclear testing and disposal processes.
Native American Tribe government representative	Tribal Meetings	She asked if proposed activities at Hill AFB would be conducted in developed areas or undeveloped areas of the installation.
Native American Tribe government representative	Tribal Meetings	He noted that there are some sensitive areas in the Area of Potential Effect (APE).
Native American Tribe government representative	Tribal Meetings	He asked how the Air Force will be handling/identifying cultural resources on private lands. Some well-known projects in the region had experienced problems because the Army Corps of Engineers failed to address cultural resources on private land.
Native American Tribe government representative	Tribal Meetings	He asked if the Air Force could provide language on the Section 106 strategy regarding private lands.
Native American Tribe government representative	Tribal Meetings	He asked if the LiDAR and hyperspectral imagery would be made available.
Native American Tribe government representative	Tribal Meetings	He asked for a description of what was meant by the "landscape approach." He mentioned that he wanted to be sure that the "landscape approach" was not going to be some type of predictive modeling approach.
Native American Tribe government representative	Tribal Meetings	He asked if travel would be reimbursable for on-site meetings.
Native American Tribe government representative	Tribal Meetings	He asked if there will be opportunities to go out while the cultural resources are being identified during field surveys. They [the Tribe] typically do not identify funerary sites until they come across one that may actually be impacted. They keep that information to themselves unless there is a reason to identify it.
Native American Tribe government representative	Tribal Meetings	There are very sensitive areas in Montana and on the eastern front of the Rocky Mountains. There are several cultural resources that have historic and ethno-historic documentation. This is a project they will need to focus on because it does cover areas with sensitive cultural resources.

Affiliation	Comment Submitted Via	Comment
Native American Tribe government representative	Tribal Meetings	He asked if the Air Force has GIS shapefiles for the project footprint so he can compare them to their GIS database of cultural resources.
Native American Tribe government representative	Tribal Meetings	He asked if there will be any health concerns to local communities.
Native American Tribe government representative	Tribal Meetings	He said he appreciates the Air Force including the Tribes today and taking the tribal voice seriously. He wants to make sure going forward that the Air Force continues the momentum. He also does not want tribal comments lumped in with public comments and wants the government-to-government relationship maintained.
Native American Tribe government representative	Tribal Meetings	He asked if there is an estimate for off-site undertakings near Malmstrom (the number of sites being decommissioned/refurbished, etc.).
Native American Tribe government representative	Tribal Meetings	He asked if the group would also address the roads around the project area as the discussion continues. Roads would require repair during and after the project.
Native American Tribe government representative	Tribal Meetings	He asked if nuclear material will be disposed of at Malmstrom AFB.
Native American Tribe government representative	Tribal Meetings	She asked if the project team has already been working with the Three Affiliated Tribes of the Fort Berthold Indian Reservation, and what their response has been.
Native American Tribe government representative	Tribal Meetings	She asked if disposal of the Minuteman III components could pose any harm or danger to humans, plants, animals, and the environment, or if they could impact historic properties or Tribally sensitive areas.
Native American Tribe government representative	Tribal Meetings	She asked for clarification on what was meant by decommissioning.
Native American Tribe government representative	Tribal Meetings	She asked how deep the launch facilities are.
Native American Tribe government representative	Tribal Meetings	The Tribal perspective is that landscapes are sacred, and he wants to be sure that all cultural resources are managed properly and with Tribal input.
Native American Tribe government representative	Tribal Meetings	He noted that if there would be any new ground disturbance [at Camp Navajo], then the Navajo Nation should be notified and consulted with. He added that the whole mountain range there (San Francisco Peaks) is considered a Traditional Cultural Property (TCP).
Native American Tribe government representative	Tribal Meetings	He mentioned that the only concern at this point for Camp Navajo would be if any new ground disturbances are planned. He requested advance notice of any cultural surveys at Camp Navajo and suggested that good ethnographic information would be needed with the surveys.
Native American Tribe government representative	Tribal Meetings	She asked if any artifacts have been found from previous trenching. For example, were any artifacts found on the Fort Berthold Reservation?
Native American Tribe government representative	Tribal Meetings	She asked if any Tribal members were invited to participate in the supporting studies.
Native American Tribe government representative	Tribal Meetings	She mentioned that it is good that the cultural resources survey process will include Tribal participation.
Native American Tribe government representative	Tribal Meetings	The Air Force should involve Tribal members in cultural resource surveys, as well as monitoring activities.
Native American Tribe government representative	Tribal Meetings	The Air Force should inform the Tribes when new cultural resources are identified or discovered.
Native American Tribe government representative	Tribal Meetings	The Air Force should follow-up with the Tribes regarding concerns that are expressed.
Native American Tribe government representative	Tribal Meetings	Tribes should be informed of the issues and concerns expressed by all of the Tribes during the Tribal scoping effort.
Native American Tribe government representative	Tribal Meetings	She asked for clarification on disposal of components.
State government	Website Uploaded Document	Please advise the Department when it is time to review the Draft EIS so comments can be submitted regarding the analysis.
State government	Website Uploaded Document	The Nebraska Department of Natural Resources (Department) has reviewed each station on the remote meeting website. Areas of Departmental jurisdiction and expertise include but are not limited to the following: • surface water rights • groundwater well registrations • dam safety • floodplain management Based on the Department's review of the project, portions of the Off-Base Elements of the GBSD Weapon System Deployment may potentially affect Department resources.
State government	Website Uploaded Document	Military Installation Development Authority, an instrumentality of the State of Utah (MIDA), and Utah Defense Alliance (UDA) welcome this opportunity to comment on the proposed GBSD actions and their environmental impact in our State for your consideration.

Affiliation	Comment Submitted Via	Comment
State government	Website Uploaded Document	In accordance with Section 508 of the Rehabilitation Act guidance, MIDA/UDA understand the activities outlined on your Meet Online website (gbsdeis.com) of the potential effects to the human and natural environments from deployment of the Ground Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) system and the decommissioning and disposal of the Minuteman III ICBM.
State government	Website Uploaded Document	The GBSD program can also have some positive effects on the environment and citizens of the state of Utah. Our comments will focus on some of the Socioeconomic and Transportation factors as mentioned in Station #3 and Construction activities covered in Station #5 from your Meet Online website.
State government	Website Uploaded Document	MIDA/UDA believe the Air Forces strategic basing decision to locate the program management functions of the GBSD program on Hill AFB will prove beneficial in a number of ways. The new GBSD program management office offers easy access to the expertise in the workforce of the Minuteman ICBM Program Management Office at Hill AFB. With the existing and extensive program support infrastructure located on Hill AFB, the Utah Test Training Range storage and disposal abilities should help reduce some costs as the ramp down of the Minuteman ICBM mission begins with growth and phasing in of the GBSD mission. We believe these natural synergy gains for the GBSD program will also help the environment and conserve resources by not requiring the duplication of existing multi-billion dollar facilities at a new location.
State government	Website Uploaded Document	Additionally, we see Hill AFB Enhanced Use Lease EUL) program, and the Falcon Hill National Research Park, as an asset for the GBSD mission with its ability to provide long term commercial office and lab space to GBSD prime contractor, Northrup Grumman. This opportunity allows Northrup Grumman to have new facilities built to their requirements, right next to Hill AFB. This inherit benefit places Northup Grummans core GBSD support employees next door to the Air Forces GBSD workforce for added mission productivity and synergy. This secure campus is called the Roy Innovation Center (RIC).
State government	Website Uploaded Document	The Falcon Hill developer projects the RIC will house four or five facilities which will be constructed in this area north of Hill AFBs fence line. Falcon Hills ability to construct these facilities now will benefit the GSBD Program Management Office as their MILCON funded facilities are constructed in the future by ensuring the Northrup Grumman support contractor operations are functional and running as the Air Force workforce grows to full strength and moves into the planned new Air Force facilities
State government	Website Uploaded Document	Utah and the communities surrounding Hill AFB will benefit from the GSBDs economic activities starting with the initial Falcon Hill and MILCON construction efforts. The long-tenn impact from GBSDs program is projected to infuse a portion of its $80B projected cost through its programs execution throughout the state and region. The state of Utah is responding to this economic opportunity by funding transportation projects to improve traffic flow for Hill AFBs workforce and the surrounding communities. Legislative funds have been appropriated to rebuild Interstate I-15, which runs North and South next to Hill AFB to add more vehicular capacity. After the inception of the Falcon Hill EUL project, a new West gate was commissioned by the state followed by a project to rebuild the 650 North Interchange to allow for improved traffic flow on and off the base.
State government	Website Uploaded Document	Recognizing GBSD growth on base and Falcon Hills RIC development, the state legislature has funded a new 1800 North Interchange on 1- 15, next to Hill AFB, that includes a new base gate, giving its workforce additional traffic options. In addition, Utah is planning transportation improvements for 1-15 5600 North Interchange which services Hill AFB's Roy Gate. Moreover, they are considering allocating additional funding to relocate and build a new gate and to widen the road to improve traffic flows for the RIC and base traffic exiting to the north.
State government	Website Uploaded Document	In addition, flowing from the 1-15 1800 North Interchange construction, the Falcon Hill Developer is exploring constructing additional housing options east of Hill AFB that would allow its workforce and military members options to reside closer to the base which would reduce commute times, resolve transportation and traffic problems, and reduce pollution.
State government	Website Uploaded Document	Finally, MIDA is working with the Falcon Hill Developer in considering the development of rail trail that would connect Hill AFB's West Gate, its future 1800 N Gate and Roy gate together outside the fence. This trail would be expanded into a would a broader active transportation plan which would directly connect an urban trail from the base to downtown Ogden, Utah. It would provide a connection to Ogdens traffic hub with commuter rail connections to Salt Lake City and Provo. This trail would give on base housing residents and Hill AFB's workforce opportunities for recreation and exercise close to their homes and workplaces, while preserving this transportation corridor to Hill AFB for future use as more transportation technologies are developed.
State government	Website Uploaded Document	Utah has had a sustained effort of focusing its higher educational institutions on developing STEM programs to develop a steady flow of potential Hill AFB workers, tailored to support the mission at Hill AFB. The effort will continue to interact with Hill AFB to keep its actions in step with the Air Force mission.
State government	Website Uploaded Document	MIDA/UDA believe all of these projects will benefit the GBSD mission and are important positive socioeconomic, transportation and construction factors to consider the in GBSD EIS development. We support the Air Force's decision to locate the GBSD in the State of Utah.
Private citizen	Website Comment	To whom it may concern, I have browsed the materials presented in the open exhibit of the website and would like to see more of this format going forward. For my comments I believe the proposal calls for the destruction of the MM3 systems and I am curious why that is necessary given these vehicles have been used before in the Orbital Sciences Minitour rocket system through Northrop Grumman. The MM3 with its reliable and quick launch solid fuel ability along with upper thrust termination for accurate orbital injection would make these rockets valuable to smaller satellite providers and those who wish to do low earth science payloads or quick launch payloads like universities. In addition I would hope that the nuclear portion of the payload could be recycled for use in the new system as my cursory search shows they are both using the W87 warheads. Reuse and recycling of components will help reduce environmental impact overall I would think as well as reducing a small portion of the financial burden associated with replacing and decommissioning systems with radioactive and hazardous chemical components. Thank you for you time.
Elected official	Website Comment	I am strongly in favor of the deployment of the GBSD ICBM and the decommissioning and disposal of the Minuteman III ICBM.
Private citizen	Website Comment	When will maps of the proposed new utility corridors and maps of the abandoned utility corridors be available for review? When will landowners expect to see documents to approve the proposed rights-of-way access?
Private citizen	Website Comment	As a consummate outdoors person, a physicists having worked on ICBM and related technologies, it appears the public needs to fully understand the primary and secondary the details of the mitigation plans as we know there will be toxic spills, as well as water-way disruptions. There will be adverse impact to wildlife, and the way-of-life for residents of the area. Beavers are necessary for rebuilding damaged or destroyed ecosystems, and the Air Force has taken apparent adverse actions. Beavers can naturally bring sustainable ecosystems that revitalize natural systems. Rather than seek human caused consequences, it appears the mitigation plans treat nature as a waste, and the public must have complete insight, full transparency, on how the primary and secondary mitigation plans will be carried out, prior to any new work.

Affiliation	Comment Submitted Via	Comment
Private Citizen	Website Comment	I am strongly opposed to nuclear weapons. Nuclear weapons have the potential to destroy all life on earth, especially human beings. Why do we want to upgrade our nuclear weapons? It seems that if we upgrade our nuclear weapons then many other countries will want to do the same, making the world more dangerous rather than safer. I oppose the proliferation of nuclear weapons and I recommend we remove and not replace our nuclear weapons at all Air Force installations, including Malmstrom here in Montana.
Private citizen	Website Comment	Yes, another alternative or mitigation measure would definitely reduce or avoid impacts. It boggles my mind that we talk so casually about the environmental impact of nuclear weapons this way. The destructive force of but one of them would certainly crater every item under all 13 of the stated environmental resource categories. Has our bureaucracy lost its small mind? But, let's ignore reality. Let's get out our jewelers loupes and examine the narrowly defined micro-scope of the project—the environmental impact of moving 150 of these juggernauts and their various pieces around on the ground. Let's not discuss their economic contribution to the crushing national debt. Let's not talk about the soul-killing shadow cast across all our lives by the uncertainty of when these might launch and where they might land. Let's not mention the half-life of plutonium, the yield of modern warheads, the toxicity of radioactive fallout, the size of blast craters, the height of plumes, or the unspeakable threat to every living breathing being on our home planet. Let's not recognize the cognitive dissonance of a promotional video that actually gloms together the words, “Safe, Secure, Lethal.” In our supposed environmental impact analysis, let's not calculate even the carbon emissions portion of the astonishing pollution pumped out by US Air Force annually. Let's just walk in a calm and orderly fashion to our doom. In our micro-scoping, we are offered no meaningful options. We could choose the course of “No Action” and continue on our current path to destruction, or we could choose the much more expensive option of refurbishing a newer and bolder path to destruction. Constrained by the scope of our discussion, we are not allowed to consider the lowest-cost, most environmentally sound option: Remove the Minuteman III missiles and replace them with... nothing. I'm sorry; I won't play by the rules of this crazy conversation. I insist on speaking the truth. We cannot afford nuclear weapons any longer. They are lethal in the extreme—which means not safe and not secure. The pollution caused in building and maintaining them is killing our planet and us with it. There is no environmentally responsible way to deploy them. Can we be honest about this in our EIS?Here's my proposed solution:We decommissioned 50 missiles from silos in Montana in 2009. We have the capability to decommission the remaining 150 of them. We should at least be allowed to consider that most obvious option.
Private citizen	Website Comment	The ICBM system is a danger to our world and should be removed. The missiles are destabilizing and a serious risk of accidental war. The cost to our nation and our earth is excessive and unwarranted. Our security is much better served by meeting domestic needs and restoring diplomacy.
Private citizen	Website Comment	My husband, Bernard F. Stanley, is owner of family homestead property adjacent to one of the Missile Man sites that are in this proposal. Since the time which the missile site was made operative, it has been surrounded by currently producing oil wells. If the proposed GBSDs were deployed there surely would be ground vibration to disrupt or break the surrounding infrastructure of the oil fields. How does this scenerio fit with your plan?
Private citizen	Website Comment	We cannot afford nuclear weapons any longer. They are lethal in the extreme—which means not safe and not secure. The pollution caused in building and maintaining them is killing our planet and us with it. There is no environmentally responsible way to deploy them. Can we be honest about this in our EIS? Here's my proposed solution: There were 50 missiles decommissioned from silos in Montana in 2009. We have the capability to decommission the remaining 150 of them. We should at least be allowed to consider that most obvious option. Thank you!
Elected official	Website Comment	Fergus County Montana and the surrounding areas would like to request impact dollars for local infrastructure. Our water and sewer systems, along with the added use to our County roads will be majorly impacted while construction is in progress. We would use any proposed dollars for infrastructure that would also impact the GBSD project. Housing in our area is in short supply. We are presuming the GBSD project will bring families to our area on both a part time and permanent basis. Fergus County is requesting monetary support to provide for the construction of such housing. We as a community want to be proactive and involved in this project to make this a welcoming, and successful endeavor for all involved.
Private citizen	Website Comment	If you are going to lay cable in a different route than present, there are some teepee rings to look for.
Private citizen	Tt email-†gbsdeis@tetratech.com	As an agricultural producer and landowner in the project area that grew up with the missile sites, I am pleased with the way the United States Air Force has maintained and secured the present sites including the movement of the existing missiles for maintenance, etc. Provided the USAF and its contractors take the necessary precautions in removing, site updating and replacing the current ICBMs with the new models, I am okay with the project.
Private citizen	Tt email-†gbsdeis@tetratech.com	If anything, I would recommend that the roads used to complete the work be maintained in a manner that is provided in Federal guidelines and not county guidelines. That would include upgrading and replacing paved roads that were installed in the mid 1970's for the benefit of the USAF in maintaining certain missile sites. Especially in the northwest part of Cheyenne County Nebraska.
Private citizen	Tt email-†gbsdeis@tetratech.com	I am a general partner in a farming enterprise with land in Burke and Ward counties in North Dakota. Indeed, at least one of the project Minuteman sites is surrounded by our property and we are very interested in the environment near our property. Your letter states that in this project the Minuteman system will be replaced by the GBSD system. As part of this project you will no doubt be handling and transporting hazardous materials. While your letter states that “The Proposed Action would not include generating or disposing of nuclear material…”, there is always an opportunity for a spill of these or other hazardous materials if they handled or transported. Federal rules for safe transportation of hazardous materials are detailed in Title 49 of the Code of Federal Regulations (49 CFR). I ask that all personnel involved in this project be carefully trained, tested and practiced in the requirements of 49 CFR so as to minimize the risk of a release of hazardous material. Test results should be carefully audited by project management. Measures should also be taken to train personnel in their specific role in any response to any release of hazardous material.
Private citizen	Tt email-†gbsdeis@tetratech.com	In addition to safe handling of hazardous materials, project personnel should be carefully trained on their response to errors and mistakes in handling missile components. Lack of such preparation is described in frightening detail in the film Command and Control, a 2016 documentary film about nuclear missile repair “accident” in Arkansas in the 1980s and is viewable on Netflix. Indeed it was no accident, but the predictable result of the lack of planning. I urge all project leadership to watch this film and take its lessons learned to heart. The consequences of a mistake in handling missile components could be catastrophic.
Private citizen	Tt Physical address in Fairfax, VA	Please correct address for future:

Affiliation	Comment Submitted Via	Comment
Private citizen	Tt Physical address in Fairfax, VA	My wife and I own land northeast of Denton, MT. I am sure that is why we received the notice for comments from James D. Hunsicker. We (I) concur with your plan to update the original 50 year old Minuteman III ICBM system. Infrastructure must be maintained and updated in order for it to perform what it was originally intended. We provide no opposition to your plan.
Private citizen	Website Comment	As a land owner in close proximity to an existing LCF I would ask about the impact to farming operations next to or near existing LCFs or LFs. On the LFs are the existing silos to be left in place and re-used with the new equipment or are they to be removed and a new silo to be installed? The work field was quite large for each silo when initially put in place.
Private citizen	Website Comment	As one who remembers the initial construction in the early 1960's, and as a former township official in the affected area, my concern is rural roads. Our roads, and bridges are already inadequate for current agricultural needs. I am concerned that placing additional traffic on these roads and bridges, especially heavy traffic, could cause irreperable damage. Some townships in the affected area near me have budgets that will not allow repair of damaged roads. I hope my comment is given some consideration. Since I did not recieve notice of the project until the letter I recieved yesterday, November 25, 2020, I was unable to respond earlier
Private citizen	Tt email-†gbsdeis@tetratech.com	In regards to a letter that I just received (addressed to my deceased husband so should come to me Karen Wolfer) and would like more information as to how this will affect my land~ also~ which land as I have land by Benedict but primarily by Butte ND so I guess the scoping materials,etc and and other information that you may have would be helpful.
State government	Tt email-†gbsdeis@tetratech.com	We received the attached notice letter regarding an upcoming project. Can you please provide us with a list of properties impacted for the City of Greeley, Greeley Urban Renewal Authority (GURA), and Greater Greeley Improvement District (GGID) and the needs for each property? I will be your point of contact for this project, please do not hesitate to reach out to me via email or cell, listed below, with any additional information.
Private citizen	Tt email-†gbsdeis@tetratech.com	Please send email with details and scoping materials
Private citizen	Tt email-†gbsdeis@tetratech.com	I would like digital copy of the scoping materials for the project land based missiles in the Roy area
Private citizen	Tt email-†gbsdeis@tetratech.com	I received your letter of November 15, 2021 regarding the possible use of my property for construction of a GBSD utility corridor. You asked for my comments on this. I am strongly against the use of part of my property for these purposes.I would rather you kept the new system (if installed) on the lands you currently have under the existing systems you already have in place.If you use part of my property for this, first of all, it may destroy the value and usage of the rest of whatever parcel you cross or build on. It may also limit the resale or value of the entire piece to someone else. Who wants to build or buy next to a largetower or underground or above ground utilities.The next reason I do not want this on my property is that if this is on my property, I will likely be monitored or questioned any time I am close to the towers or your utilities. This could be any time I am: 1. putting posts in the ground to repair fences 2. building new fences 3. farming 4. timber harvesting 5. timber/removal or burning 6. digging ditches 7. building a cabin on property 8. building a house or sheds on property 9. shooting or controlling gophers on property 10. hunting of wildlife, which sometimes has wounded animals going beyond property lines, and requires the retrieval and/or removal of animals.Any normal activities I do close to your use of the property will likely be questioned or I may be harassed just because of the security you would have to have in place for your systems. I feel that this is fair on my part to question what will happen to me or my assigns if this is installed.Since I have several parcels of land, I would appreciate your identifying which piece I have that you might want to use and what purpose you have for it. The map is too vague for me to be able to identify a specific spot. Would the use be in the center of a parcel or on the edge? All I am asking for is to know what your intentions are on my land. Let me reiterate, I am not in favor of the use of my land for any of these purposes. I appreciate you considering my comments with return communication of answers to my questions.
Private citizen	Tt email-†gbsdeis@tetratech.com	I cannot use this map. No details, I have no idea what we are talking about. Please send anything that shows the area better. Any help wil be appreciated.
Private citizen	Tt email-†gbsdeis@tetratech.com	I am in receipt of James Hunsicker's letter dated November 15, 2021 concerning the possible need for construction and maintenance easements for a new GBSD system. Mr. Hunsicker's letter states a portion of our land may support future GBSD infrastructure. We have a pending sale of our land and Mr. Hunsicker's letter must be disclosed to the buyer. Our problem is your map does not provide sufficient detail to tell us if our land is actually a site of the proposed GBSD utility corridors. The closing date for the sale of our land is two weeks away. I would be grateful if you could confirm if our land may be a site of proposed GBSD utility corridors.
Private citizen	Tt email-†gbsdeis@tetratech.com	I just received the letter concerning the future proposed action on replacing all the land based minute man missiles in the Sidney/Kimball NE area. I am writing to see who the contact might be as to leasing storage areas for the equipment needed for this project. I have 2 areas. One is 36 acres and the other 10 acres has open storage with office space availability. Please contact me for further details or the name and contact number of whom I can visit with.
Private citizen	Tt email-†gbsdeis@tetratech.com	This is to inform you that XXX passed away on 10/25/2020. The land was inherited by his Son and Daughter and is now in their names. They each have a 50% Ownership in the land.
Private citizen	Tt email-†gbsdeis@tetratech.com	This is in reply to your letter dated November 15, 2021, in regards to the Environmental Impact Statement and my property. My comment is an inquiry: I would like to know what part of my property would be impacted by your project and how would it be impacted?

Affiliation	Comment Submitted Via	Comment
Private citizen	Tt email-†gbsdeis@tetratech.com	We received a letter for the proposed action for the GBSD as we have 2 pieces of property. The letter speaks of a possible communications tower. Could you explain what that would look like and the possible height of that. That would be our main concern with the comment period.
Private citizen	Tt email-†gbsdeis@tetratech.com	I will be the contact for WBI Energy Transmission Inc., for utility conflicts around MAF Base and other areas in north central North Dakota.
Private citizen	Tt email-†gbsdeis@tetratech.com	We are in receipt of the Department of the Air Force's notice of the intent to prepare a Draft Environmental Impact Statement to evaluate impacts of the implementing the proposed Ground Based Strategic Deterrent Intercontinental ballistic missile system and decommissioning of the Minuteman III ICBM system. I am contacting you on behalf of the owners and interested parties of properties located in North Dakota.A communications cable for the Minuteman III ICBM system exists on our property. Our property is in close proximity to the Air Force's Minuteman site.Our comments in the Draft EIS are as follows: 1. We request that the Air Force install future communication cables and buried facilities within the public rights of way and cease installation of buried cables and other facilities on private property. Installing communication systems on private property results in an unnecessary encumbrance and impacts to private property. The Air Force has other options than installing communication systems on private property, the public right of way is intended for such purposes and should be the routes used by the Air Force. In my opinion, the practice of installing buried communications systems on private property further increases the risks of damage by unintended consequences when private property owners excavate on their property. Decades pass and memories fade. Many of the farmers and landowners are unaware that buried cables installed nearly 60 years ago are located on their property. This risk could be mitigated by installing the buried cables within the public rights of way. 2. We further request that in the event the communications systems for the Minuteman III ICBM system are abandoned, the Air Force give consideration to relinquishing all easements and rights taken by the Air Force. Thank you for the notification of the pending process. We trust the comments will be considered.Please do not hesitate to contact me if you have any additional questions or wish to discuss my comments.
Private citizen	Tt email-†gbsdeis@tetratech.com	GBSD EIS Project Team: As I stated in my earlier email, we have a pending land sale in Cheyenne, WY that may have a possible need for construction and maintenance easements for the new GBSD system. If so, this issue must be disclosed to the buyer. I have a simple question for your government POCs.
Private citizen	Tt email-†gbsdeis@tetratech.com	I am a land owner in Nebraska (3 parcels) and recently received a letter from the US Air Force regarding the GBSD and EIS projects. The letter was forwarded to me and I might not receive any future correspondence as I have moved and your records are not accurate. Please update my address in your system - see below for the old and new address.
Private citizen	Tt email-†gbsdeis@tetratech.com	Good Afternoon, I received a letter regarding a limited portion of my property that may support future GBSD infrastructure. I am trying to see who the best POC is so that I can get an 811 since I am trying to build a residence on the property within the next year or so. I was told that there may be a decommissioned line on the property but I would like to make sure and get it properly marked so that nothing is accidentally damaged or dug up. The property is in Sidney, NE, if you require more information please let me know. Thank you for your time and consideration. I look forward to hearing from you.
Private citizen	Tt email-†gbsdeis@tetratech.com	We received a letter dated Nov. 15th, 2021 referencing GBSD deployment activities. It was addressed to my uncle, who deceased in 2001, and addressed to his sister (my mom, and I am her Power of Attorney), who is now the land owner of the property that is involved which is located in Mountrail County, North Dakota. The proper information for contacting the landowner is the following:
Private citizen	Tt email-†gbsdeis@tetratech.com	I need information regarding use of any of my land in the updating of a missile site located just to the east of my property. I have several questions regarding this and I'm sure the farmer who leases my land will have as well. Please send any information regarding the proposed use of my land. Questions that come to mind right now are: 1. How much of my land are you proposing to use during work on the missile site? 2. What is the location on my property that you are proposing to use? 3. How long will this portion of the land be unavailable for farming? When will this begin? 4. Will you reimburse my farmer and myself for losses incurred due to unavailability to use this part of my land for farming or lease of this land? 5. Will any damage to the land be repaired? This includes any environmental or productivity concerns? 6. Can you guarantee that NO debris or contaminated water will be dumped or be placed on the land and that no water or soil contamination will occur? 7. What is the expected duration of time that this portion of the land will be unavailable for farming? 8. There is a gas pipeline that runs along the east edge of this property. What precautions will be taken to assure there is no damage to that pipeline? 9. I would expect that you would be responsible for any damage or loss of use of that pipeline correct? 10. Will access to an oil and gas well located on XXX be impacted? 11. There are CRP acres on this quarter of land. What will the impact be to those areas? Will you be responsible for any damage to or effects or fines related to the CRP areas? Please send any information for this proposed use of my land to myself and Mr. Ankenbauer. We would appreciate any maps that would show the proposed use of these acres.

Affiliation	Comment Submitted Via	Comment
Private citizen	Tt email-†gbsdeis@tetratech.com	Good evening. I am writing in response to a written correspondence sent from your office regarding a Draft Environmental Impact Statement for deployment of the Ground Based Strategic Deterrent system while decommissioning and the disposal of the Minuteman III ICBM system. Within the correspondence my feedback was requested within a 30 day time period due to my personal property being included in the area for the proposed Ground Based Strategic Deterrent system.I have been preparing to build on my property since my recent retirement. I had wanted to inform your office that if property is required of me that I would like to avoid construction near my homestead and the surrounding native prairie. I am an astronomy enthusiast and would, also, like to avoid any light pollution.If it is determined that you require use my property, I would appreciate the proposed siting on the Northeast corner of the North East Quarter of Section 9, Township 161N Range 87West. The above stated area would allow easy access to existing township roads from the east, as well as the south. The North East Quarter of Section 9, Township 161N, Range 87 West drains well, so it should be easily used during the soft spring roads and high water table.Please, avoid any construction near my farmstead on Quarter Section 9, as I am planning to build. I am also requesting that you avoid any construction on the Northwest corner of the Southwest quarter of Section 4, Township 161N, Range 87 West. The Northwest corner is native prairie that I intend to leave the entirety of my 240 acres in section 9 and section 4 to The Nature Conservancy for native restoration. In addition to get to the northwest corner where the prairie is, would also require extensive road construction that is unnecessary. Access to the northwest corner is low and could be used as wetlands. This is very important to me because I want this land named in loving memory of my brother, Larry Bruce Jacobson, who was killed in Vietnam on August 25, 1970 USA time. If my property is needed for the construction I would appreciate that any overhead spotlight be used only when on site as to avoid unnecessary light pollution.Thank you for your time and consideration. If you have any questions, please, feel free to contact me at your earliest convenience. I look forward to hearing from you.
Private citizen	Tt email-†gbsdeis@tetratech.com	Good evening. I am writing in response to a written correspondence sent from your office regarding a Draft Environmental Impact Statement for deployment of the Ground Based Strategic Deterrent system while decommissioning and the disposal of the Minuteman III ICBM system. Within the correspondence my feedback was requested within a 30 day time period due to my personal property being included in the area for the proposed Ground Based Strategic Deterrent system. I have been preparing to build on my property since my recent retirement. I had wanted to inform your office that if property is required of me that I would like to avoid construction near my homestead and the surrounding native prairie. I am an astronomy enthusiast and would, also, like to avoid any light pollution. If it is determined that you require use my property, I would appreciate the proposed siting be at XXX. The above stated area would allow easy access to existing township roads from the east, as well as the south. Please, avoid any construction near my farmstead , as I am planning to build. I am also requesting that you avoid any construction on the Northwest corner of the Southwest quarter. The Northwest corner is native prairie that I intend to leave the entirety of my 240 acres to The Nature Conservancy for native restoration. In addition to get to the northwest corner where the prairie is, would also require extensive road construction that is unnecessary. Access to the northwest corner is low and could be used as wetlands. This is very important to me because I want this land named in loving memory of my brother who was killed in Vietnam. If my property is needed for the construction I would appreciate that any overhead spotlight be used only when on site as to avoid unnecessary light pollution. Thank you for your time and consideration. If you have any questions, please, feel free to contact me at your earliest convenience. I look forward to hearing from you.
Private citizen	Tt email-†gbsdeis@tetratech.com	Thank you for the November 15,2021 letter regarding the open comment period for the proposed GBSD for the Minot Air Force Base missile fields. Based on the letter, there could be new utility corridors and communication towers needed for a new system. As the owners of XXX, which currently has AFB underground cable, we are opposed to any above-ground structures other than posts due to a family residence and wildlife management area. This area is a migration route for waterfowl and many other birds. Any added structures or lights could interfere with migration, especially those that migrate at night. Not knowing where the towers or other new above-ground infrastructure are proposed for the GBSD system, we can only request that those structures be placed away from the immediate surrounding area. Please consider our concerns and request. Thank you for the opportunity to comment.
Private citizen	Tt email-†gbsdeis@tetratech.com	My husband Jeff and I received a letter from James D. Hunsicker about the AF GBSD project, saying that it might affect our property. We live in the middle of a town. How could this possibly affect our property? We would like to know specifically what property under our name is likely to be affected. Please email me or call me to give me the legal description of the property that could be affected. I am also the editor of the local newspaper and I would like to speak to someone about this letter because other people in our community have received the same form letter and are wondering what the heck it means.
Private citizen	Tt email-†gbsdeis@tetratech.com	I am a small (8 acres) landowner with property between Great Falls and Belt, Montana. I recently received a letter (dated November 15, 2021) from the Department of the Air Force concerning the proposed Ground Based Strategic Deterrent intercontinental ballistic missile system and decommissioning and disposing of the Minuteman III proposed action. The letter contained a small map of the proposed action. This letter to potentially affected landowners was my husband's and my first notification of this large-scale project. Approximately 10 years ago we lost a portion of our property due to eminent domain for relocation of US Highway 87/89. As a result, we are concerned about future activities that would impact our property. We would like to provide pertinent, focused comments on this proposal which has the potential to impact our property. In order to focus our comments, we request a more detailed map of the proposed action for the area containing our property. The small map attached to the above referenced letter does not provide sufficient detail to know what may actually be proposed on or near our property. We would appreciate this map in a timely manner so our comments can be submitted within the requested 30 day comment period. We are already behind on submitting comments because the letter was written November 15 but was not mailed to us until December 08. Thank you for your assistance in providing additional detail concerning the GBSD ICBM proposed action near our property. If this request must come under the Freedom of Information Act with additional detail, please let me know.
Private citizen	Tt email-†gbsdeis@tetratech.com	I am a property owner in Ward County, North Dakota and potentially may support the future GBSD infrastructure. What is the Project Website?

Affiliation	Comment Submitted Via	Comment
Private citizen	Tt email-†gbsdeis@tetratech.com	Dear James and Jennifer. I am XXX, a farmer, rancher and veterinarian who owns land in Kimball and Banner Co. Nebraska. I am also the chairman of the Banner County Wind Energy Assn. As you may or may not know we have been working on two large wind energy projects in the area for several years. Two companies, Orion and Invenergy have spent millions on leases, environmental impact studies, met towers, transmission studies, landowner leases, and have already poured cement pads for the towers in several locations. This project was projected to inject millions of dollars into the local economy, provide much needed jobs in the area including long term jobs, and provide tax releif for all landowners in Banner Co. All planning for the projects was based on a 1500 foot setback from the many missile bases in the area. A few months back the Air Force informed Orion and Invenergy that they decided to now require a 2.3 mile setback. Due to the large number of missile sites in the aera this arbitrary decision made by somebody in the Air Force is a deal killer for Invenergy and will dramatically downsize Orion's project. All of the pads currently awaiting towers are within 2.3 miles of missile sites. No explanation that makes sense were given to us and attempts to negotiate with Air Force officials for a closer setback have been futile. Many wind towers across the border in Colorado are as close as the original 1500 foot setback. We understand the need for national defence, and there is also a need for renewable energy to fight climate change. This location is rated as one of the top 4 locations in the country for wind energy development. You are asking landowners for cooperation with the new missile installations and we understand that. Now we are asking the Air Force to cooperate with us. We can live with a longer setback than 1500 feet and based on projects already in existence we are sure that you can live with less that 2.3 miles which is rediculous. That is a 5.6 mile diameter around each site. You cooperate with us and you will find all of us very easy to get along with.
Business/commercial organization	Tt email-†gbsdeis@tetratech.com	My name is XXX and I work for Phillips 66 over in Billings MT. I have received the attached inform letter and would like to request additional information from you. Phillips 66 and Yellowstone Pipe Line Company have numerous high pressure interstate petroleum pipeline systems located in the areas depicted on page 3 of the attached impact statement. These systems are vital to the Rockies Region oil and gas supply chain and require a high level of safety and communication when working around such systems. I would like to better understand your proposed project and the potential impacts to our pipeline systems. Could you please email me the digital copies of the scoping materials and any other relevant information to help Phillips 66 and Yellowstone Pipe Line Company better understand this project and it's potential impacts. Also, for your reference, I've attached a copy of our Encroachment Guidelines which give guidance on how 3rd parties can safely work around our pipeline systems (specifically see items 1.11, 1.12, and 1.13 related to 3rd party utility installation around our pipelines). I'm also available to chat this through over the phone as well.
Private citizen	Tt email-†gbsdeis@tetratech.com	I received the letter from Department Of The Air Force, James D. Hunsicker, GS - 15, DAFC, regarding my property and future access to the same? I am not quite sure , that I understand what would you needed from my property. I am concern and please advise. It is said in your letter that I can request digital copies of the scoping materials.
Business/commercial organization	Tt email-†gbsdeis@tetratech.com	I was hoping to follow up with you regarding the below and attached.
Business/commercial organization	Tt email-†gbsdeis@tetratech.com	I am a RES-RW Agent for Phillips 66 located in the Billings, Montana Rockies Region Office. In regard to the USAF's Draft EIS, we have reviewed the letter, FAQ's, and the one map that was provided. We will need more specific information as to the various locations. We did not receive any mapping regarding the Wyoming or Utah sites. Would you be able to provide some maps for those areas? Also could you possibly provide a more clear definition of the project scope? • Specific locations where these activities will take place • Proximity to various pipelines throughout this multi-state area • Vibratory concerns for removal of old equipment or installation of new equipment • Are there going to be fiber connections that need to cross our pipeline rights-of-way We look forward to working with you and the USAF regarding this important and strategic project to protect our nation. Thank you!
Private citizen	Gov Email afgsc.gbsd.impactstudy@us.af.mil	I am a small time rancher that has a commercial gravel pit on my property. I would like to lease this gravel pit for the missile projects going on. It is in a good location with several missile sites close by. Located in Kimball County Nebraska. Currently the Kimball county road department has been purchasing gravel for the county roads. Two large industrial buildings were built on this gravel. I don't have a website but want to be considered for this large project. Please forward this email to the person who is in charge of this project. I don't have internet out here where I live. I tried to fill out a form I found on Northrop Grumman website which required me to enter a personal website which I don't have. Like I said I am a retired police officer on 654 acres that has a good gravel pit on it. I believe this lease would be a real positive for all parties. Please consider our gravel pit for this project. Please forward this email to the appropriate people for consideration.
Private citizen	Tt Physical address in Fairfax, VA	On November 17, 2021 I received a letter stating that a portion of my property in Cheyenne County Nebraska may support future GBSD infrastructure.
Private citizen	Tt Physical address in Fairfax, VA	New Address:

Affiliation	Comment Submitted Via	Comment
Private citizen	Tt Physical address in Fairfax, VA	Good evening. I am writing in response to a written correspondence sent from your office regarding a Draft Environmental Impact Statement for deployment of the Ground Based Strategic Deterrent system while decommissioning and the disposal of the Minuteman III ICBM system. Within the correspondence my feedback was requested within a 30 day time period due to my personal property being included in the area for the proposed Ground Based Strategic Deterrent system. I have been preparing to build on my property since my recent retirement. I had wanted to inform your office that if property is required of me that I would like to avoid construction near my homestead and the surrounding native prairie. I am an astronomy enthusiast and would, also, like to avoid any light pollution. If it is determined that you require use my property, I would appreciate the proposed siting on the Northeast corner . The above stated area would allow easy access to existing township roads from the east, as well as the south. West drains well, so it should be easily used during the soft spring roads and high water table.
Private citizen	Tt Physical address in Fairfax, VA	My wife and I are in receipt of James D. Hunsicker's letter advising that our property may be impacted by the creation of a new Ground Based Strategic Deterrent intercontinental ballistic missile system. His letter is attached for your reference.While we certainly recognize the need to upgrade our strategic defense system in light of recent ongoing challenges from China, Iran, Russia and perhaps others, we do not want any launch facility, missile alert facility, or communication tower constructed on our property. We currently have a Verizon cell tower on our property, and there is no room to accommodate other infrastructure such as described in James Hunsicker's November 15, 2021 letter.We are receptive to allowing construction of a new underground utility corridor, provided that (1) access to our property is via the least intrusive route, (2) remediation following completion of the utility corridor restores the surface land to its original condition, and (3) some reasonable easement agreement can be negotiated.Thank you for the heads-up regarding the progress in creating a new GBSD system.
Private citizen	Tt Physical address in Fairfax, VA	I would like to comment on the enclosed letter I received, but it is hard to do because, even though this letter states there is an attachment enclosed with the "Proposed Utility Corridors Associated with the GBSD Deployment Program", there was only a map of the Existing Utility Corridors attached, and that map is useless to me. It is impossible to even identify my property on the existing utility corridors map as there are no property descriptions of any kind that will tell you exactly where the corridors are. How does this relate to the new corridors?? Does it?? I have comments I want to make, but until I know what parts of my property your new corridors are going thru, how can I do that. Are you using the same corridors?? Are you putting the new corridors somewhere completely different?? Are you putting a communications tower on my property?? I would like to talk to someone!! I have several questions which do not allow me to make "comments" on your new GBSD until I get answers. How could anyone???
Private citizen	Tt Physical address in Fairfax, VA	I received a letter from James D. Hunsicker, GS-15, last week regarding the potential use of a portion of property I own in Cheyenne County, Nebraska for future GBSD infrastructure, should the current Minuteman Missile system be updated mid decade. Please update my address for any future correspondence, as this letter was nearly lost.
Private citizen	Tt Physical address in Fairfax, VA	My land is farm land which I have rented out to local farmers. I am not interested in this project. My land will not be available to you.
State government	Tt Physical address in Fairfax, VA	We have reviewed your November 15, 2021, letter. This project should have no adverse effect on the North Dakota Department of Transportation highways; however, access from the State and US Highways may require a new or temporary drive permit if modification to existing, or installation of new drives is needed for construction. Also, utility permits for crossing under state and US highways will be required for new cable/communication infrastructure for this project. Additionally, if because of this project any work needs to be done on highway right of way, appropriate permits and risk management documents will need to be obtained.
Private citizen	Website Uploaded Document	I represent XXXX LLC and am one of its members. The LLC is a family entity . We received notice dated November 15, 2021, that the Air Force may wish to use land we own to either place underground utility lines, with an accompanying 16 foot easement, or construct a communications tower. Our family has been in the Monarch area for over a century. We believe the land effected by the notice is across Belt Creek from a cabin we own. The cabin was built in 1927 with logs hauled across the continental divide from Whitefish as a retirement gift for a local nurse. It frankly is irreplaceable. My wife and I own an adjacent cabin which is also directly across Belt Creek from the effected property. The affected property is undeveloped riparian area on the west side of Belt Creek. It has no road or bridge access. Being native Montanans who have grown up in Great Falls we have lived all our lives (with the exception of my 87 year old mother) with the missiles in the area. One of my fond memories is going down into a command center as a cub scout. So we as a family support the defense of the United States. Unfortunately the letter we received and the webpage do not contain enough information for us to know whether we should be overly concerned with the GBSD project. The following questions come to mind for which I was not able to find answers in the letter or the website: What is the nature of the utilities in the proposed easement? Will there be any above ground presence in the proposed utility easement? What does the communications tower look like? How will a communications tower effect viewshed? How much if any trees will be removed for a communications tower? Does the communications tower have ambient noise or noise when in use? Are there any radio or other type waves that harm health resulting from the tower? Will the landowner’s wishes as to the location of the tower be strongly considered? How will the Air Force access the property which has no current road access or bridge access across Belt Creek? If the proposed access is driving across the creek bed, are the adverse effects a consideration in the EIS? What is the remediation that will be mandated after construction? What is the compensation proposed for the taking of the land? I appreciate the opportunity to comment on the GBSD proposal but without further facts on the impact to XXXX LLC land I must be opposed to use of that land. It is our sincere hope we can have a dialog to resolve all issues and concerns.

Affiliation	Comment Submitted Via	Comment
Private citizen	Website Comment	I am an absentee owner of a farm in Bottineau County that may be required for infrastructure support. I am concerned about the loss of prime farmland and about the effects of the project on such sensitive matters as ground water purity and safety, soil contamination, and protection of local wildlife. I am also concerned about the number of acres of my farm that may be required and the impact that will have on the value of my land and its usability for continued farming activities. Finally, I am aggrieved that the letter I received was sent one year after the formal comment period closed. As an absentee owner, I do not regularly access local newspapers and was completely unaware of this project until the letter arrived today. I hope the Air Force will do a better job moving forward of keeping ALL interested parties informed about the project, the Environmental Impact Statement, and impacts of the project on property owners.
Private citizen	Website Comment	As a land owner in receipt of your letter regarding use of my property, I am concerned.First, if the masks and vaccines work, why aren't we getting a chance to talk face to face instead of hiding behind the internet?Your letter was ambiguous as to what may be in store in the future with your plans.My property is partially designated wetlands. Portions of the property are fragile soils and plant life. It includes nesting habitat for rare birds. My home and my business are located on my property. I vigorously oppose anything that will cause negative impacts to my home, land, or business use of my land.I am a patriot and a veteran. I support my country's ability to defend itself. I also strongly believe in my individual rights as a property owner. I worked my entire life to end up where I am. Please be clear in what you hope to accomplish on my property.
Private citizen	Website Comment	Thank you for the communication from James Hunsicker dated November 15, 2021. I wanted to get on the mailing list to be informed about developments in the transition from Minuteman to the modernized GBDS system. I am a landowner of property in Fergus County, MT. Communications cables cross my property. The November 15 letter was very helpful and clear and I especially appreciated seeing the map showing how the missile facilities are clustered. I had only previously known about buried cables on my property without really understanding the larger system they are part of. My environmental comment is that for military projects like this, I want the Air Force to minimize impact and harm to wildlife, wildlife habitat, watersheds and streams. Thank you for your regular communications to us over the years!
Private citizen	Website Comment	It appears that utility easements would follow current and existing easements, but without more detail it is not possible to know that for certain. My comment is that I would EXPECT those easements to be used, versus disrupting current land use, or encroaching on additional areas of the ranch and forrest lands.
Private citizen	Website Comment	I would need to know what part of my property will be impacted and how before I could provide any comments.
Business/commercial organization	Website Comment	I am strongly opposed to nuclear weapons. If we have the wrong person at the controls we could easily destroy the world, or if Russia, China, Israel, you name the country goes crazy our world could be destroyed in a very short time period. We need to move towards fewer nuclear weapons.
Private citizen	Website Comment	We received a letter from you saying that a limited portion of our property may support future GBSD infrastructure. You want us to comment on that now, but you have failed to identify what property that we own that you are talking about. We own two different properties fully within the City of Choteau. Our house is on one; our business is on the other. Are you people talking about putting cell towers in our backyard, or bulldozing our newspaper to accommodate communications infrastructure? If that's what you are proposing, we vehemently object to your proposal. If you're talking about taking down our house or razing our business, there's no amount of money that could compensate us for losing our home and livelihood. We think it's unfair and impossible to comment on your proposed action when you haven't told us what our property would be used for and whether it would displace us. It would be great if someone from your organization could get back to us and tell us which of our properties could potentially be affected. It's just crazy to me that you are talking about putting infrastructure in the middle of a town of 1600 people. Further, if the AF is contemplating making big changes to the infrastructure of the city of Choteau, I think we need more of a heads up than this cryptic, confusing letter from James D. Hunsicker. I am going to forward a copy of this letter to the mayor of Choteau and the Teton County commissioners to see whether they have any insight into this vague plan to use residential property in a town for GBSD infrastructure.
Private citizen	Website Comment	It seems like the proposals of towers is rather a "cave man" approach because of the high winds in the area, the cluttering of the landscape and the signal for enemy targets. Since other utilities are buried it would seem logical to bury the communication towers also and use remote or satellite communications.
Business/commercial organization	Website Comment	As a landowner and business owner in Cheyenne County, Sidney NE I wanted to pass on possible land lease and/or office space lease that I have available for use during this project time frame. I have a history of working with the US Government thru a building lease with the VA here in Sidney. I have approx. 45 acres of land that can be used for storage and transportation staging areas. I also have a 5,000 sq foot office area. This is a paved road with direct access to the locations in question. I can provide reference contact information if necessary. As stated earlier I have fulfilled the Government accounting forms necessary as I have provided the lease space for the VA clinic building in the past. I have the experience to work within the Government requirements on projects.
Private citizen	Website Comment	I would like a detailed land map of proposed requests for the 16' land easements (utility corridor) and proposed land requests (communication towers sites).
Private citizen	Website Comment	Good day Ms Jarvis. I would like to offer my full support of this project as well as the farm I grew up on which may be be helpful as a material staging area or other uses. It is adjacent to two state highways and has power on old uninhabited farmstead. Burke county section 35. I was involved in the late 80's in the splice upgrade project thru the missile field surrounding the Minot AFB. It was a great summer job. Please feel free to contact me by e-mail or phone. I was born and raised in the Stanley area and have been in solved as construction manager for many years. I am now close to retirement age and am excited to see this project come to the area.
Private citizen	Website Comment	Hi Ms Jarvis. I would like to offer my full support to your project. We own Section 35 Burke county with a LF just off SW corner of property on Lostwood Wildlife refuge. It could be an ideal staging area for a portion of this project and was used during the late 80's during the missile field splice upgrade. It is directly off highway, nobody lives there and has power. Yours if needed. Feel free to contact me.
Federal government	Website Comment	Bureau Of Mines And Geology Bulletin 105 March 1978, Caves Of Montana, Author Newel Campbell. Campbell mentions in his publication a number of small caves and rock shelters near the A-4 Minuteman missile site east of Monarch MT. Elevation 6000ft. Question/comment Will any work be done near this site if it is still a viable facility? Is there a chance the caves near this area will be effected in any way and will any caves in the proximity be surveyed for bats or other wildlife species?

B.9 FEDERAL REGISTER NOTICE OF AVAILABILITY OF DRAFT EIS

Page intentionally left blank.

hazard or exposure assessments or the risk characterization.

D. What are the next steps for finalizing revisions to the risk determination?

EPA will review and consider public comment received on the draft revised risk determination for the NMP risk evaluation and issue a final revised NMP risk determination. If finalized as drafted, EPA would also issue a new order to withdraw the TSCA section 6(i)(1) no unreasonable risk order issued in Section 5.4.1 of the 2020 NMP risk evaluation. This final revised risk determination would supersede the December 2020 risk determinations of no unreasonable risk. Consistent with the statutory requirements of TSCA section 6(a), the Agency would then propose risk management actions to address the unreasonable risk determined in the NMP risk evaluation.

IV. References

The following is a listing of the documents that are specifically referenced in this document. The docket includes these documents and other information considered by EPA, including documents that are referenced within the documents that are included in the docket, even if the referenced document is not physically located in the docket. For assistance in locating these other documents, please consult the person listed under **FOR FURTHER INFORMATION CONTACT**.

1. EPA. Draft Revised Unreasonable Risk Determination for NMP, Section 5, June 2022.
2. EPA. Risk Evaluation for n-Methylpyrrolidone (NMP). EPA Document #740–R–18–009. December 2020. *https://www.regulations.gov/document/EPA-HQ-OPPT-2019-0236-0081.*
3. Executive Order 13990. Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis. **Federal Register**. 86 FR 7037, January 25, 2021.
4. Executive Order 13985. Advancing Racial Equity and Support for Underserved Communities Through the Federal Government. **Federal Register**. 86 FR 7009, January 25, 2021.
5. Executive Order 14008. Tackling the Climate Crisis at Home and Abroad. **Federal Register**. 86 FR 7619, February 1, 2021.
6. Presidential Memorandum. Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking. **Federal Register**. 86 FR 8845, February 10, 2021.
7. EPA Press Release. EPA Announces Path Forward for TSCA Chemical Risk Evaluations. June 2021. *https://www.epa.gov/newsreleases/epa-announces-path-forward-tsca-chemical-risk-evaluations.*
8. EPA. Proposed Rule; Procedures for Chemical Risk Evaluation Under the Amended Toxic Substances Control Act. **Federal Register**. 82 FR 7562, January 19, 2017 (FRL–9957–75).
9. EPA. Final Rule; Procedures for Chemical Risk Evaluation Under the Amended Toxic Substances Control Act. **Federal Register**. 82 FR 33726, July 20, 2017 (FRL–9964–38).
10. EPA. Summary of External Peer Review and Public Comments and Disposition for n-Methylpyrrolidone (NMP). December 2020. *https://www.regulations.gov/document/EPA-HQ-OPPT-2019-0236-0082.*

Authority: 15 U.S.C. 2601 *et seq.*

Dated: June 27, 2022.

Michal Freedhoff,

Assistant Administrator, Office of Chemical Safety and Pollution Prevention.

[FR Doc. 2022–14108 Filed 6–30–22; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[FRL OP–OFA–023]

Environmental Impact Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information 202–564–5632 or *https://www.epa.gov/nepa.*

Weekly receipt of Environmental Impact Statements (EIS)

Filed June 17, 2022 10 a.m. EST Through June 27, 2022 10 a.m. EST

Pursuant to 40 CFR 1506.9.

Notice

Section 309(a) of the Clean Air Act requires that EPA make public its comments on EISs issued by other Federal agencies. EPA's comment letters on EISs are available at: *https://cdxnodengn.epa.gov/cdx-enepa-public/action/eis/search.*

EIS No. 20220086, Draft Supplement, NMFS, WA, The Makah Tribe Request to Hunt Gray Whales, Comment Period Ends: 08/15/2022, Contact: Grace Ferrara 206–526–6172.

EIS No. 20220087, Final, FERC, LA, MP66–69 Compression Relocation and Modification Amendment MP33 Compression Station Modification Amendment Project, Review Period Ends: 08/01/2022, Contact: Office of External Affairs 866–208–3372.

EIS No. 20220088, Draft, USAF, WY, Ground Based Strategic Deterrent Deployment and Minuteman III Decommissioning and Disposal, Comment Period Ends: 08/15/2022, Contact: Carla Pampe 318–456–7844.

EIS No. 20220089, Final, USACE, SC, Charleston Peninsula Coastal Storm Risk Management, Review Period Ends: 08/01/2022, Contact: Nancy Parrish 843–329–8050.

EIS No. 20220090, Draft Supplement, DOE, AK, Alaska LNG Project, Comment Period Ends: 08/15/2022, Contact: Mark Lusk 304–285–4145.

Amended Notice

EIS No. 20190132, Draft Supplement, USFS, MT, WITHDRAWN—Montanore Evaluation Project, Comment Period Ends: 08/08/2019, Contact: Craig Towery 406–293–6211.

Revision to FR Notice Published 06/21/2019; Officially Withdrawn per request of the submitting agency.

Dated: June 27, 2022.

Cindy S. Barger,

Director, NEPA Compliance Division, Office of Federal Activities.

[FR Doc. 2022–14107 Filed 6–30–22; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[EPA–HQ–OPP–2014–0125; FRL–9880–01–OCSPP]

Pesticide Reregistration Performance Measures and Goals; Annual Progress Report for 2019; Notice of Availability

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: This notice announces the availability of EPA's progress report in meeting its performance measures and goals for pesticide reregistration during fiscal year 2019. This progress report also presents the total number of products registered under the ''fast-track'' provisions of the Federal Insecticide Fungicide and Rodenticide Act (FIFRA).

DATES: Submit comments on or before August 30, 2022.

ADDRESSES: Submit your comments, identified by docket identification (ID) number EPA–HQ–OPP–2014–0125, through the *Federal eRulemaking Portal* at *https://www.regulations.gov.* Follow the online instructions for submitting comments. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Additional instructions on commenting and visiting the docket, along with more information about dockets generally, is available at *https://www.epa.gov/dockets.*

FOR FURTHER INFORMATION CONTACT: Rose Kyprianou, Antimicrobials Division (7510M), Office of Pesticide Programs,

Page intentionally left blank.

B.10 NEWSPAPERS AND PUBLICATION DATES

Page intentionally left blank.

Newspaper	First Publication Date	Second Publication Date
Arizona Daily Sun	1-Jul-22	5-Aug-22
Choteau Acantha	29-Jun-22	20-Jul-22
Great Falls Tribune	1-Jul-22	22-Jul-22
Guernsey Gazette	28-Jun-22	26-Jul-22
Judith Basin Press	30-Jun-22	21-Jul-22
Lewistown News-Argus	29-Jun-22	20-Jul-22
Mandan, Hidatsa, & Arikara Times	29-Jun-22	13-Jul-22
Minot Daily News	1-Jul-22	15-Jul-22
Mountrail County Promoter	29-Jun-22	13-Jul-22
New Town News	1-Jul-22	15-Jul-22
Sidney Sun Telegraph	29-Jun-22	27-Jul-22
Standard-Examiner	1-Jul-22	5-Aug-22
Sterling Journal Advocate	1-Jul-22	29-Jul-22
Times-Clarion	30-Jun-22	21-Jul-22
Wendover Times	30-Jun-22	4-Aug-22
Western Nebraska Observer	30-Jun-22	28-Jul-22
Wyoming Tribune Eagle	1-Jul-22	29-Jul-22

Page intentionally left blank.

B.11 EXAMPLE OF DISPLAY ADVERTISEMENT

Page intentionally left blank.

The US Air Force Invites You to Review the Draft Environmental Impact Statement and Attend a Public Hearing for the Ground Based Strategic Deterrent Deployment and Minuteman III Decommissioning and Disposal

The public is invited to review and comment on the US Air Force's (Air Force) Draft Environmental Impact Statement (EIS) for the proposed Ground Based Strategic Deterrent (GBSD) Deployment and Minuteman III Decommissioning and Disposal, and attend a public hearing to learn more about and provide input to the proposed project.

Pursuant to the National Environmental Policy Act (NEPA), the Air Force has prepared a Draft EIS for public review that analyzes the potential environmental consequences associated with the proposal to deploy the GBSD Intercontinental Ballistic Missile (ICBM) weapons system, called Sentinel, and decommissioning and disposal of the aging Minuteman III ICBM weapons system. Both on- and off-base construction and operational activities would take place at Francis E. Warren Air Force Base (AFB), WY, Malmstrom AFB, MT, and Minot AFB, ND, and throughout the missile fields. Additional construction, maintenance, training, storage, testing, support, decommissioning, and disposal actions would occur at Hill AFB, UT; the Utah Test and Training Range, UT; Camp Guernsey, WY; and Camp Navajo, AZ. Deployment of the GBSD system would begin in 2023 at F.E. Warren AFB, and be implemented at Malmstrom AFB and Minot AFB over the next 15 years. The Proposed Action would not include generating or disposing of nuclear material, and the number of land-based nuclear missiles would remain unchanged.

The proposed GBSD deployment activities would include the construction and renovation of 433,000 square feet of on-base facilities at F.E. Warren AFB and 22,000 square feet of on-base facilities at Camp Guernsey, and the refurbishment of all 150 launch facilities and 15 missile alert facilities, construction of 18 new communication towers on newly acquired properties, the establishment of approximately 910 miles of new utility corridors, and the potential to conduct utility work within the 1,611 miles of existing utility easements throughout the F.E. Warren AFB missile field. During construction, a workforce hub would be established in or near Kimball, NE, housing up to 3,000 temporary workers and support personnel, and four centralized construction laydown areas would be established in or near Stoneham, CO, Kimball and Sydney, NE, and Albin, WY.

The proposed GBSD deployment activities would include the construction and renovation of 363,000 square feet of on-base facilities at Malmstrom AFB, and the refurbishment of all 150 launch facilities and 15 missile alert facilities, construction of 31 new communication towers on newly acquired properties, the establishment of approximately 1,277 miles of new utility corridors, and the potential to conduct utility work within the 1,750 miles of existing utility easements throughout the Malmstrom AFB missile field. During construction, a workforce hub would be established in or near Great Falls and Lewistown, MT, housing up to 3,000 temporary workers and support personnel each, and eight centralized construction laydown areas would be established in or near Augusta, Belt, Denton, Judith Gap, Lewistown, Stanford, Vaughn, and Winfred, MT.

The proposed GBSD deployment activities would include the construction and renovation of 525,000 square feet of on-base facilities at Minot AFB, and the refurbishment of all 150 launch facilities and 15 missile alert facilities, construction of 13 new communication towers on newly acquired properties, the establishment of approximately 939 miles of new utility corridors, and the potential to conduct utility work within the 1,531 miles of existing utility easements throughout the Minot AFB missile field. During construction, a workforce hub would be established in or near Minot, ND, housing up to 3,000 temporary workers and support personnel, and seven centralized

construction laydown areas would be established in or near Balfour, Bowbells, Garrison, Mohall, Ruso, Stanley, and Wabek, ND.

The proposed GBSD deployment activities would include the construction and renovation of 97,000 square feet of on-base facilities at Hill AFB and 129,000 square feet of on-base facilities at Utah Test and Training Range.

The proposed GBSD deployment activities would include use of the existing missile storage area at Camp Navajo.

Where to Obtain the Draft EIS

The Draft EIS is available for download from the project website at www.gbsdeis.com. An electronic copy may be requested by calling (307) 773-3400 or emailing gbsdeis@tetratech.com. It may also be reviewed at the at the following public libraries:

- Kimball Public Library, 208 S Walnut St., Kimball, NE 69145
- Great Falls Public Library, 301 2nd Ave. N, Great Falls, MT 59401
- Lewistown Public Library, 701 W Main St., Lewistown, MT 59457
- Fort Berthold Library, 220 8th Ave E, New Town, ND 58763
- Nueta, Hidatsa, Sahnish, College Library, New Town, ND 58763
- Minot Public Library 516 2nd Street Ave. SW, Minot, ND 58701
- Laramie County Library, 2200 Pioneer Ave., Cheyenne, WY 82001

Public Hearing Information

The Air Force is holding two virtual public hearings and seven regional in-person public hearings to provide the public with the opportunity to learn more about the proposal and provide input. All members of the public are encouraged to attend as your input will assist the Air Force in making more informed decisions. Both the in-person and the virtual public hearings will include: (1) opening introduction by Air Force Global Strike Command; (2) a pre-recorded video outlining the scope of the GBSD project and findings in the Draft EIS; and (3) an opportunity for attendees to provide oral comments. The project presentation at in-person hearings will begin at 6:00 p.m., formal public testimony will begin at approximately 7:00 p.m., and the hearing venue will close at 8:30 p.m. Oral statements will be limited to 3 minutes. If your statement is of considerable length, please submit it in writing through the project website, via email, or through postal mail.

In-Person Public Hearings

- July 19, 2022, 5:30 p.m. to 8:30 p.m. CT, Three Affiliated Tribes, Pow Wow Grounds, New Town, North Dakota
- July 21, 2022, 5:30 p.m. to 8:30 p.m. CT, Minot Municipal Auditorium, Old Armory Room, Minot, North Dakota
- July 26, 2022, 5:30 p.m. to 8:30 p.m. MT, Mansfield Center for the Performing Arts, Missouri Room, Great Falls, Montana
- July 28, 2022, 3:00 p.m. to 6:00 p.m. MT, Central Montana Fair, Fergus County Fairgrounds, Lewistown, Montana
- August 2, 2022, 5:30 p.m. to 8:30 p.m. MT, Kimball Jr/Sr High School, Kimball, Nebraska
- August 3, 2022, 5:30 p.m. to 8:30 p.m. MT, Prairie High School, Raymer, Colorado
- August 4, 2022, 5:30 p.m. to 8:30 p.m. MT, Laramie County Community College, ANB Bank Leadership Center, Cheyenne, Wyoming

Virtual Public Hearings

August 8th, 2022, from 5:30 p.m. to 8:30 p.m. CT and August 9th, 2022, from 5:30 p.m. to 8:30 p.m. MT.

Registration is required.

All public hearing materials, and a link to register for the virtual public hearing are provided on the project website at www.gbsdeis.com. The virtual public hearing may adjourn before 8:30 p.m. upon or after verification that all participants who desire to speak have been heard and there are no more registered speakers.

To request accommodation to access the print and audio presentation, ask for help making a comment (per the Americans with Disabilities Act), or if you need assistance attending via phone due to lack of internet availability, please call Air Force Global Strike Command Public Affairs at (307) 773-3400 no later than August 1, 2022.

Public Comment

Comments on the Draft EIS may be submitted in a variety of ways to include orally at the virtual public hearings. Additionally, written comments on the Draft EIS may be submitted through the project website at www.gbsdeis.com; via email to gbsdeis@tetratech.com; or by mail to:

GBSD Project EIS
10306 Eaton Place, Suite 340
Fairfax, VA, 22030

Comments will be accepted at any time during the environmental review process. Comments are requested by August 15, 2022, to ensure their consideration in the Final EIS.

Notice of Availability in the Federal Register

The Notice of Availability as published by the Environmental Protection Agency may be found at: www.federalregister.gov/d/2022-14107 or www.govinfo.gov.

Page intentionally left blank.

B.12 SAMPLE STAKEHOLDER LETTER AND FLYER

Page intentionally left blank.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

July 1, 2022

Howard N. Kosht, GS-15, DAF
Reply to: GBSD Project EIS
10306 Eaton Place, Suite 340
Fairfax, VA 22030

Dear Stakeholder

Pursuant to the National Environmental Policy Act of 1969 (NEPA) (Title 42 *United States Code* § 4321); the Council on Environmental Quality regulations for implementing NEPA (Title 40 *Code of Federal Regulations* [CFR] Parts 1500–1508); and the Air Force Environmental Impact Analysis Process (EIAP) as codified in 32 CFR Part 989, the Air Force has prepared a Draft Environmental Impact Statement (EIS) for public review that analyzes the potential environmental consequences associated with the proposed deployment of the Ground Based Strategic Deterrent (GBSD) Intercontinental Ballistic Missile (ICBM) weapons system, called Sentinel, and decommissioning and disposal of the aging Minuteman III ICBM weapons system. The Bureau of Indian Affairs, Bureau of Land Management, Bureau of Reclamation, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, U.S. Forest Service, and Wyoming Army National Guard are cooperating agencies for the EIS.

The purpose of the Proposed Action is to replace all land-based Minuteman III missiles deployed in the continental U.S. with the technologically advanced GBSD system. The Proposed Action is needed to meet national security requirements and to comply with the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232 § 1663, 132 Stat. 2153), which directs the Air Force to develop and implement a strategy "to accelerate the development, procurement, and fielding of the ground based strategic deterrent program."

In addition to replacing all land-based Minuteman III ICBMs with the GBSD ICBMs, all launch facilities, communication systems, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. Decommissioning and disposal activities would include destruction of all Minuteman III weapon systems and associated components to prevent their further use for their originally intended purpose. While certain components and subsystems of the Minuteman III have been upgraded, most of the fundamental infrastructure used today is the nearly 50-year-old original equipment. The Proposed Action would not include generating or disposing of nuclear material, and the number of land-based nuclear missiles would remain unchanged. The nuclear warheads from the Minuteman III system would be used for the GBSD system. Deployment of the GBSD system would begin in the mid-2020s, extending the capabilities of the land-based leg of the U.S. nuclear triad through at least 2075.

Both on- and off-base construction and operational activities would take place at Francis E. Warren (F.E.) Air Force Base (AFB), WY, Malmstrom AFB, MT, and Minot AFB, ND, and throughout the missile fields. Additional construction, maintenance, training, storage, testing, support, decommissioning, and disposal actions would occur at Hill AFB, UT; the Utah Test and Training Range, UT; Camp Guernsey, WY; and Camp Navajo, AZ. Deployment of the GBSD system would begin in 2023 at F.E. Warren AFB, and be implemented at Malmstrom AFB and Minot AFB over the next 15 years. The proposed GBSD deployment activities would include the construction and renovation of

approximately 1,569,000 square feet of on-base facilities, and the refurbishment of all 450 launch facilities and 45 missile alert facilities, construction of 62 new communication towers on newly acquired properties, the establishment of approximately 3,100 miles of new utility corridors, and the potential to conduct utility work within the nearly 5,000 miles of existing utility easements throughout the missile fields of F.E. Warren, Malmstrom, and Minot AFBs. During construction, a workforce hub would be established in or near Great Falls and Lewistown, MT, Kimball, NE, and Minot, ND, housing up to 3,000 temporary workers and support personnel each, and 19 centralized construction laydown areas would be established in or near Stoneham, CO; Augusta, Belt, Denton, Judith Gap, Lewistown, Stanford, Vaughn, and Winifred, MT; Kimball and Sydney, NE; Balfour, Bowbells, Garrison, Mohall, Ruso, Stanley, and Wabek, ND; and Albin, WY. While there would be no construction at Camp Navajo, the proposed GBSD deployment activities would include use of the existing missile storage area during Minuteman III decommissioning and disposal activities.

The EIS evaluates two alternatives to the Proposed Action, the Reduced Utility Corridors Alternative and the No Action Alternative (as required by NEPA). The Reduced Utility Corridors Alternative would replace all land-based Minuteman III ICBMs deployed in the continental United States with GBSD ICBMs, as would the Proposed Action. And, while it includes most of the elements of the Proposed Action, it also proposes establishing appreciably fewer miles of new utility corridors and reutilizing marginally fewer miles of existing utility corridors. Under the No Action Alternative, the Air Force would continue to maintain and operate the Minuteman III weapon system in its current configuration, and the GBSD weapon system would not be deployed.

The public comment period for the GBSD EIS begins with publication of the Notice of Availability (NOA) in the *Federal Register* on or about July [redacted] 2022. Advertisements will be published in local newspapers notifying the public of the EIS comment period and the 7 regional in-person and 2 virtual public hearings. See the included flyer for additional information on the hearings and how to obtain or where to review the Draft EIS. The Draft EIS and all materials that will be presented at the public hearings are available for review on the project website at www.gbsdeis.com. On the website, you will find information about the locations and registration procedures for all public hearings. The website will become accessible the day the NOA is published.

To ensure a thorough review of the analysis in the Draft EIS, the Air Force is soliciting comments from interested local, state, and federal agencies and organizations; Native American Tribes; and members of the public. Comments on the Draft EIS may be submitted in a variety of ways to include orally at the in-person and virtual public hearings or in writing at in-person public hearings, through the project website at www.gbsdeis.com; via email to gbsdeis@tetratech.com; or by mail to: GBSD Project EIS, 10306 Eaton Place, Suite 340, Fairfax, VA, 22030. The Air Force requests that comments on the Draft EIS be submitted within 45 days of the publication of the NOA to ensure they are considered by the Air Force for the Final EIS. If you are unable to access the website or would like to request printed or digital copies of materials, please send an email to gbsdeis@tetratech.com.

Sincerely

HOWARD N. KOSHT, GS-15, DAF
Executive Director, Strategic Plans, Programs, and Requirements

Public Hearings and Providing Comments on the
Draft Environmental Impact Statement for the Proposed Ground Based
Strategic Deterrent Deployment and Minuteman III Decommissioning and Disposal

The public is invited to review and comment on the Air Force's Draft Environmental Impact Statement (EIS) for the proposed Ground Based Strategic Deterrent (GBSD) Deployment and Minuteman III Decommissioning and Disposal.

Where to Obtain the Draft EIS

The Draft EIS is available for review and download at www.gbsdeis.com. An electronic copy may be requested by calling (307) 773-3400 or emailing gbsdeis@tetratech.com. It may also be reviewed at the at the following public libraries:

Fort Berthold Library	Minot Public Library	Kimball Public Library	Laramie County Library	Great Falls Public Library	Lewistown Public Library
220 8th Ave E New Town, ND 58763	516 2nd St Ave SW Minot, ND 58701	208 S Walnut St. Kimball, NE 69145	2200 Pioneer Ave. Cheyenne, WY 82001	301 2nd Ave. N Great Falls, MT 59401	701 W Main St. Lewistown, MT 59457

Public Hearing Information

The Air Force is holding two virtual and seven regionally-based in-person public hearings to provide information about the proposed project and to accept comments on the draft EIS. All members of the public are encouraged to attend as your input will assist the Air Force in making more informed decisions. The public hearings will include (1) opening remarks by Air Force Global Strike Command (AFGSC); (2) a pre-recorded presentation outlining the scope of the proposed GBSD project and the findings of the Draft EIS; and (3) an opportunity for attendees to provide oral and/or written comments. The presentation at in-person hearings will begin 30 minutes after the start time, formal public testimony will begin approximately one hour later, and the hearing venue will close 3 hours after the start time. Oral comments will be limited to 3 minutes for all public hearings. Comments of considerable length can be submitted in writing through the project website, via email, or through the U.S. mail (see Public Comment section below).

Regional In-Person Public Hearings

Jul 19, 2022	5:30-8:30pm CT	Three Affiliated Tribes Bow Wow Grounds, New Town, ND
Jul 21, 2022	5:30-8:30pm CT	Minot Municipal Auditorium (Old Armory Rm), 430 3rd Ave. SW, Minot, ND 58701
Jul 26, 2022	5:30-8:30pm MT	Mansfield Ctr for Performing Arts (Missouri Rm), 2 Park Drive S, Great Falls, MT 59401
Jul 28, 2022	3:00-6:00pm MT	Fergus County Fairgrounds, 153 Fairgrounds Road, Lewistown, MT 59457
Aug 2, 2022	5:30-8:30pm MT	Kimball Jr/Sr High School, 901 S Nadine St, Kimball, NE, 69145
Aug 3, 2022	5:30-8:30pm MT	Prairie High School, 42315 Wcr 133, New Raymer, Colorado 80742
Aug 4, 2022	5:30-8:30pm MT	ANB Bank Leadership Center, 1400 E College Drive, Cheyenne, WY 82007

Virtual Public Hearings

Aug 8, 2022	5:30-8:30pm CT
Aug 9, 2022	5:30-8:30pm MT

REGISTRATION REQUIRED
at www.gbsdeis.com

- All public hearing materials are available at www.gbsdeis.com.
- Hearings may adjourn before 8:30, if all oral comments have been provided.

To request accommodation to access the print and audio presentation, ask for help making a comment (per the Americans with Disabilities Act), or if you need assistance attending via phone due to lack of internet availability, please call AFGSC Public Affairs at (307) 773-3400 no later than August 1, 2022.

Public Comments

In addition to providing comments on the Draft EIS during the public hearings, written comments can be submitted through the project website at www.gbsdeis.com; via email to gbsdeis@tetratech.com; or by US mail to: GBSD EIS, 10306 Eaton Place, Suite 340, Fairfax, VA, 22030.

Comments will be accepted at any time during the environmental review process. However, oral comments provided at the public hearings and written comments received by August 15, 2022, will be considered in the preparation of the Final EIS.

Page intentionally left blank.

APPENDIX C: CULTURAL RESOURCES

Contents

Page intentionally left blank.

C.1 LETTER INVITING ADVISORY COUNCIL ON HISTORIC PRESERVATION TO PARTICIPATE IN SECTION 106 CONSULTATION AND THEIR RESPONSE

Page intentionally left blank.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

August 17, 2020

James D. Hunsicker, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Reid Nelson, Director
Advisory Council on Historic Preservation
Office of Federal Agency Programs
c/o Katharine Kerr
401 F Street NW, Suite 308
Washington, D.C. 20001

Dear Mr. Nelson

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force has determined that the GBSD Project is an undertaking with the potential to cause effects on historic properties. The GBSD Project is complex and challenging because its project locations are spread across seven states, the duration of implementation is expected to occur over 13 years, and the schedule requirements for completing the Section 106 process are constrained. To meet these challenges, the Air Force plans to pursue development of a programmatic agreement (PA) for the undertaking to address the effects of the undertaking on historic properties. The Air Force believes that preparation of a PA will be the best way to acquire feedback from the consulting parties regarding the undertaking and to incorporate and address their anticipated concerns.

Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to invite the Advisory Council on Historic Preservation (ACHP) to participate in development of the GBSD Project PA. The Air Force will be requesting ACHP staff's active participation in multiple consultations as the GBSD Project is analyzed and implemented. Anticipated future efforts for which consultation will occur include development of the PA, development of cultural resource survey plans, identification and evaluation of historic properties, assessment of effects, and planning and implementation of mitigation measures.

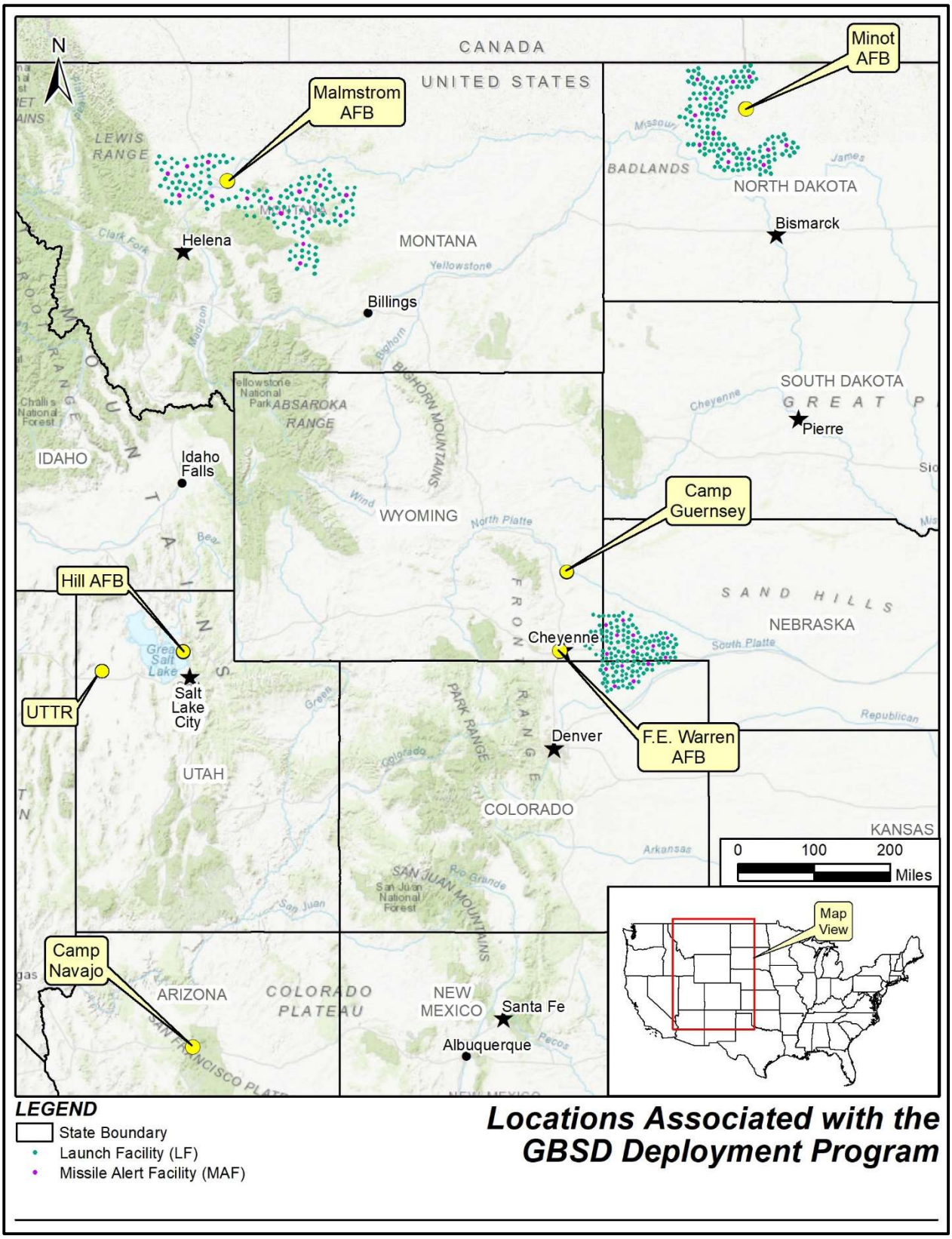
The Air Force initiated Section 106 consultation in May 2020 as it formulated the Project and began to define the Areas of Potential Effects (APEs). This early start to consultation included the State Historic Preservation Officers from all seven involved states, as well as the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service. Government-to-government consultation was also initiated in May 2020 with the Mandan, Hidatsa, and Arikara Nation, whose land the GBSD Project will cross, and 59 other federally recognized Tribes (see attached list) who may have concerns about Project effects on properties or areas of religious, traditional, or cultural importance within the project area.

The Air Force looks forward to working with you throughout the Section 106 consultation process for the GBSD Project. Thank you in advance for your assistance in this effort.

Sincerely

JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Has Initiated Section 106 Consultation for the GBSD Project


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
Yellowstone
SOUTH DAKOTA
Pierre
ABSAROKA RANGE
BIGHORN MOUNTAINS
IDAHO
Idaho Falls
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
PARK RANGE
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Has Initiated Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation
Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate

Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

September 22, 2020

The Honorable Barbara Barrett
Secretary of the Air Force
1670 Air Force Pentagon
Washington, DC 20330-1670

Ref: *Decommissioning of the Minuteman III and Transition to the Ground Based Strategic Deterrent Intercontinental Ballistic Missile*
Montana, North Dakota, Utah, and Wyoming
ACHP Project Number: 014588

Dear Madam Secretary Barrett:

In response to the recent notification by the Air Force Global Strike Command (AFGSC), the Advisory Council on Historic Preservation (ACHP) will participate in consultation to develop a Section 106 agreement document for the referenced undertaking. Our decision to participate in this consultation is based on the *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, contained within the regulations, "Protection of Historic Properties" (36 CFR Part 800) implementing Section 106 of the National Historic Preservation Act. The criteria are met for this proposed undertaking because this undertaking may have effects to historic properties that possess a national level of significance and the development of a programmatic agreement may alter the Section 106 process.

Section 800.6(a)(1)(iii) of these regulations requires that we notify you as the head of the agency of our decision to participate in consultation. By copy of this letter, we are also notifying Mr. James D. Hunsicker, Site Activation Task Force Lead, AFGSC, of this decision.

Our participation in this consultation will be handled by Ms. Katharine R. Kerr, who can be reached at (202) 517-0216 or via email at kkerr@achp.gov. We look forward to working with your agency and other consulting parties to seek ways to avoid, minimize, or mitigate the undertaking's potential adverse effects on historic properties.

Sincerely,

John M. Fowler
Executive Director

C.2 LETTERS INVITING STATE HISTORIC PRESERVATION OFFICERS TO PARTICIPATE IN SECTION 106 CONSULTATION AND THEIR RESPONSE

Page intentionally left blank.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Kathryn Leonard
State Historic Preservation Officer
Arizona State Parks State Historic Preservation Office
1100 W. Washington Street
Phoenix AZ 85007

Dear Ms. Leonard

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage your office during the development of the environmental analysis.

Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate consultation with you regarding undertakings that will be identified for the Project and potential effects to properties listed on or eligible for listing in the National Register of Historic Places (historic properties). The Air Force is engaging early with the State Historic Preservation Officers from all involved states as it formulates the Project and begins to define the Areas of Potential Effects (APEs).

The Air Force will be requesting yours or your staff's participation in multiple consultations as the Project is planned and then analyzed for its effects to historic properties. Anticipated future efforts for

which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of historic properties, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of Phase I cultural resources inventory of locations planned for construction, renovation, and demolition activities. The Air Force wishes to meet with you to present the Project in further detail.

The Air Force is coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service. The Air Force is also initiating consultation on the potential effects of the Project with federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

The Air Force looks forward to working with you and your staff throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

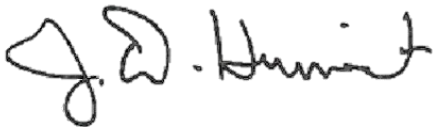
Table 1. Project Components for Each Base

Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. We would greatly appreciate if you would let Ms. Roxlau know the best way to contact you and/or your representative so we can ensure you receive all Project-related communications. Also, please let us know your remote electronic capabilities with regard to video conferencing and other communication tools.

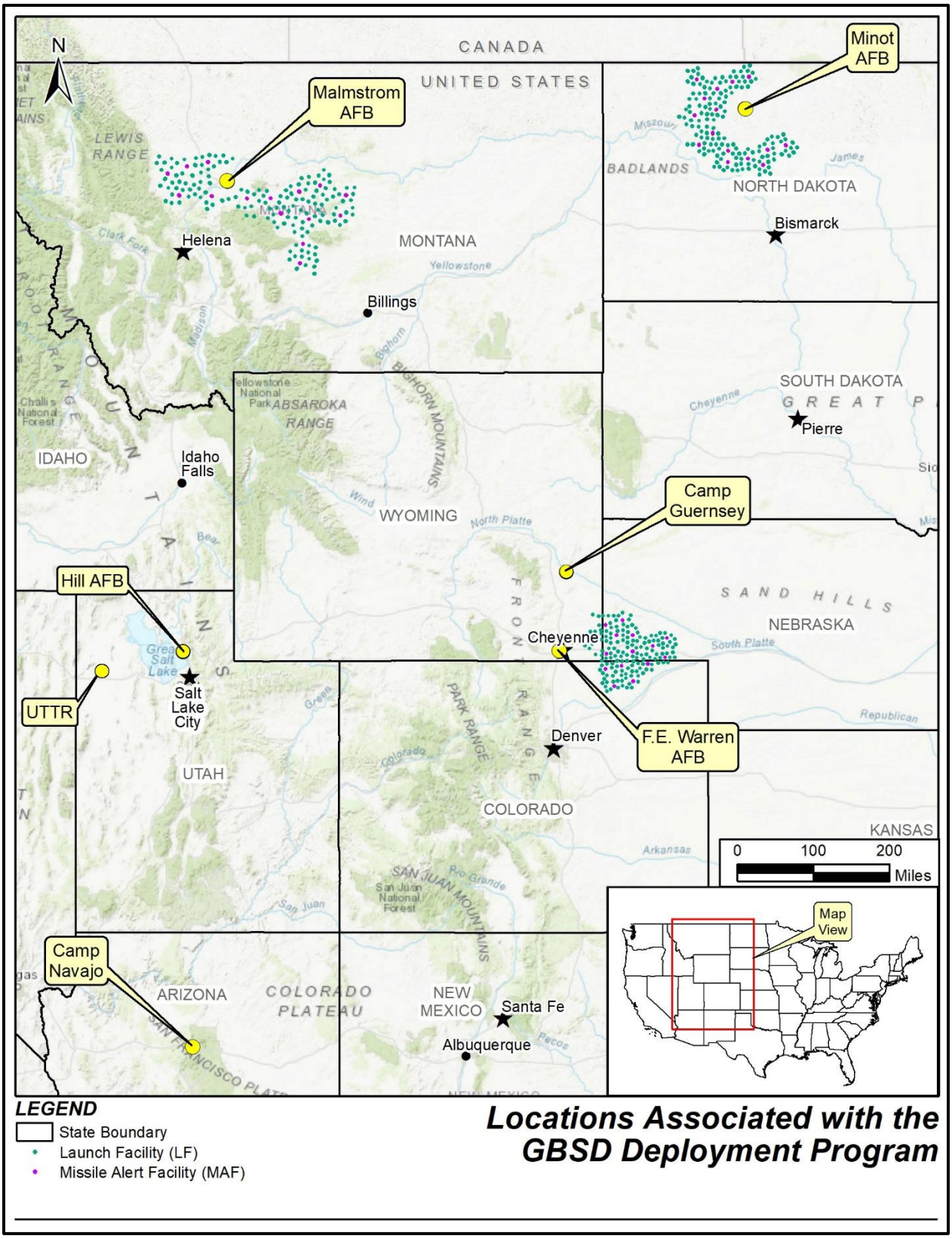
Thank you in advance for your assistance in this effort.

Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
PARK RANGE
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

Minuteman III ICBM decommissioning; SHPO-2020-0728(154126)

Erin Davis <edavis@azstateparks.gov>

Fri 6/26/2020 9:35 AM

To: Roxlau, Kathy <Kathy.Roxlau@tetratech.com>
Cc: Shelby Manney <manneys@emo.azdema.gov>

Ms. Roxlau,

The Arizona SHPO is in receipt of the US Air Force's letter dated May 19, 2020 (received by our office June 4, 2020) initiating Section 106 for the referenced project. Our comments pertain only to the activities within the state of Arizona. We understand the project would not change any activities at Camp Navajo, Arizona and would consist of decommissioning and disposing the Minuteman III.

Currently, many of our staff are teleworking due to the Coronavirus. However, we do have video conferencing capabilities. Our preferred method of contact for submittals is via email; USPS main is not regularly checked at this time. I will be the contact for this project and I look forward to working with you and the US Air Force.

Cheers,

Erin Davis, M.A.
Archaeological Compliance Specialist

Note: Please use our new azshpo@azstateparks.gov email to initiate consultation!

State Historic Preservation Office
1100 W. Washington Street
Phoenix, AZ 85007
602.542.7141
edavis@azstateparks.gov

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Steve Turner
State Historic Preservation Officer
History Colorado Office of Archaeology and Historic Preservation
1200 Broadway
Denver CO 80203

Dear Mr. Turner

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage your office during the development of the environmental analysis.

Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate consultation with you regarding undertakings that will be identified for the Project and potential effects to properties listed on or eligible for listing in the National Register of Historic Places (historic properties). The Air Force is engaging early with the State Historic Preservation Officers from all involved states as it formulates the Project and begins to define the Areas of Potential Effects (APEs).

The Air Force will be requesting yours or your staff's participation in multiple consultations as the Project is planned and then analyzed for its effects to historic properties. Anticipated future efforts for

which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of historic properties, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of Phase I cultural resources inventory of locations planned for construction, renovation, and demolition activities. The Air Force wishes to meet with you to present the Project in further detail.

The Air Force is coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service. The Air Force is also initiating consultation on the potential effects of the Project with federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

The Air Force looks forward to working with you and your staff throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

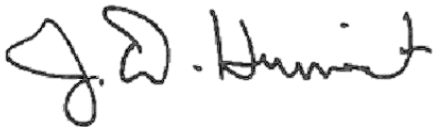
Table 1. Project Components for Each Base

Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. We would greatly appreciate if you would let Ms. Roxlau know the best way to contact you and/or your representative so we can ensure you receive all Project-related communications. Also, please let us know your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

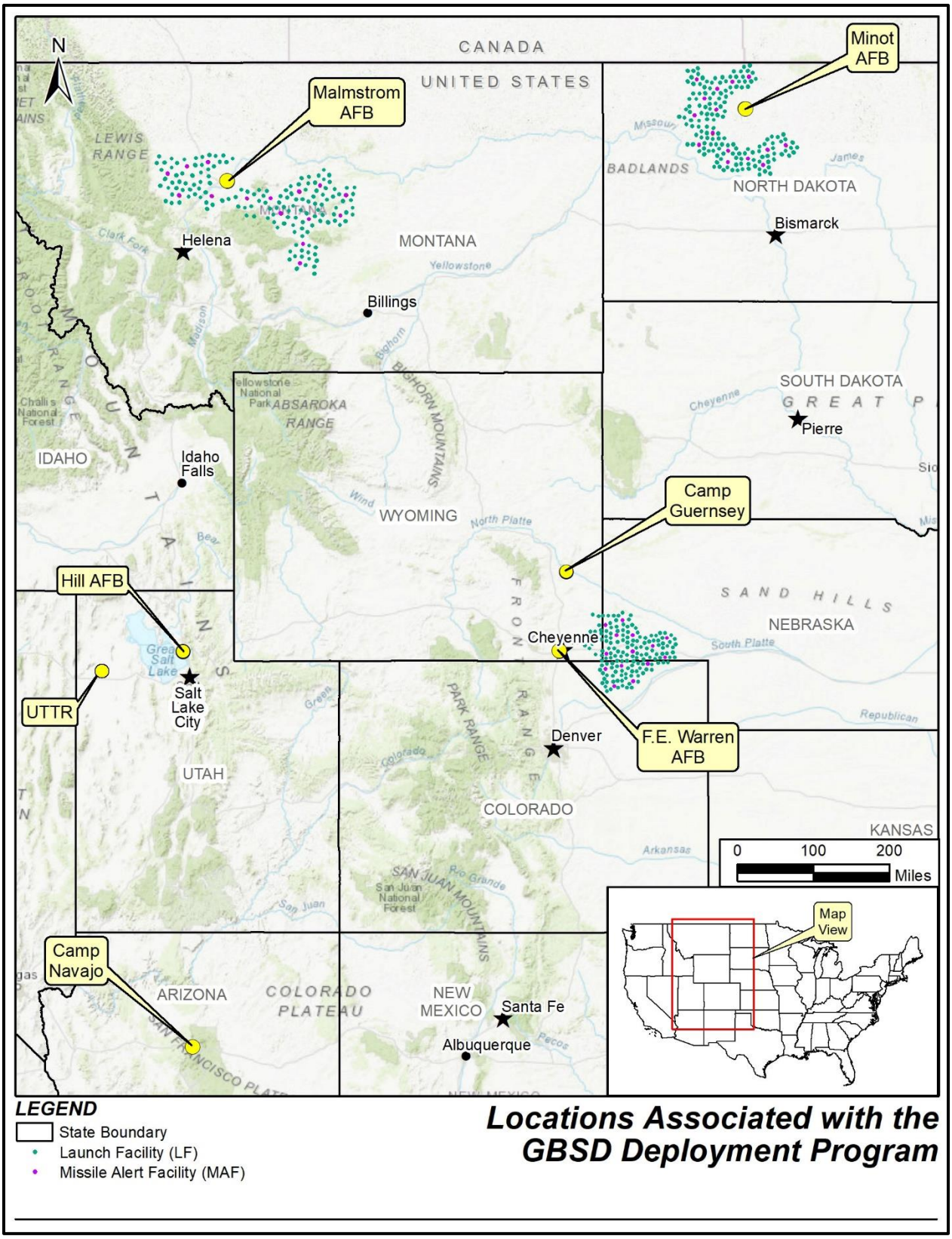
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Dr. Holly Norton, State Archaeologist/Deputy SHPO - Archaeology
Tim Stroh Deputy SHPO - Architecture


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
PARK RANGE
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

Re: Air Force GBSD Project consultation

Tobias - HC, Mark <mark.tobias@state.co.us>

Tue 6/30/2020 3:26 PM

To: Roxlau, Kathy <Kathy.Roxlau@tetratech.com>

In response to James Hunsicker's May 19, 2020 letter, please send all correspondence and project related materials in digital format. We are currently accepting digital submissions sent directly to oahp@state.co.us and we should be unveiling a secure digital file system in the short term. Please reference HC#77924 in all project related correspondence. Staff will likely be teleworking for the foreseeable future and should be available to participate in most video conference platforms.

Mark Tobias
Intergovernmental Services Manager
History Colorado | Office of Archaeology and Historic Preservation
303/866-4674 | mark.tobias@state.co.us
History Colorado Center | 1200 Broadway | Denver, Colorado 80203 | HistoryColorado.org

On Mon, Jun 22, 2020 at 12:03 PM Tobias - HC, Mark <mark.tobias@state.co.us> wrote:

> Dear Ms. Roxlau:
>
> We received your May 19 letter on June 3 and I currently anticipate that we will respond within 30-calendars days of receipt.
>
> Thank you for your email and please let me know if I may be of additional assistance.
>
> **Mark Tobias**
> **Intergovernmental Services Manager**
> History Colorado | Office of Archaeology and Historic Preservation
> **303/866-4674** | mark.tobias@state.co.us
> History Colorado Center | 1200 Broadway | Denver, Colorado 80203 | HistoryColorado.org

On Mon, Jun 22, 2020 at 11:39 AM Turner - HC, Steve <steve.turner@state.co.us> wrote:

> Thank you for your email, I have forward this to Mark who manages this program and will ask him to respond to you. I apologize for any delay in our response.
>
> **Steve Turner, AIA**
> Executive Director & State Historic Preservation Officer
>
> 
>
> History Colorado Center, 1200 Broadway, Denver, CO 80203 | www.historycolorado.org **Stay connected with History Colorado, sign up for our monthly newsletter**
>
> ***Assistant & Scheduling Requests: Dianne.Brown@state.co.us; 303.866.3355***
>
> *Under the Colorado Open Records Act (CORA), all messages sent by or to me on this state-*

owned e-mail account may be subject to public disclosure.

On Mon, Jun 22, 2020 at 11:35 AM Roxlau, Kathy <Kathy.Roxlau@tetratech.com> wrote:

Dear Mr. Turner,

A letter was mailed on May 19, 2020, to you and the others copied on this email regarding the initiation of Section 106 consultation for the Air Force's Ground-Based Strategic Deterrent project. Because we have not received a response from your office, and due to the challenges of communication during the pandemic, I am attaching a copy of the letter to this email in the hopes that it will reach you.

Best regards,

Kathy Roxlau | Cultural Resources Specialist
Direct **+1 (505) 250-7363** | kathy.roxlau@tetratech.com
Tetra Tech | Leading with Science® | tetratech.com

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Peter Brown
State Historic Preservation Officer
Montana Historical Society State Historic Preservation Office
P.O. Box 201202
Helena MT 59620

Dear Mr. Brown

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage your office during the development of the environmental analysis.

Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate consultation with you regarding undertakings that will be identified for the Project and potential effects to properties listed on or eligible for listing in the National Register of Historic Places (historic properties). The Air Force is engaging early with the State Historic Preservation Officers from all involved states as it formulates the Project and begins to define the Areas of Potential Effects (APEs).

The Air Force will be requesting yours or your staff's participation in multiple consultations as the Project is planned and then analyzed for its effects to historic properties. Anticipated future efforts for

which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of historic properties, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of Phase I cultural resources inventory of locations planned for construction, renovation, and demolition activities. The Air Force wishes to meet with you to present the Project in further detail.

The Air Force is coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service. The Air Force is also initiating consultation on the potential effects of the Project with federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

The Air Force looks forward to working with you and your staff throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

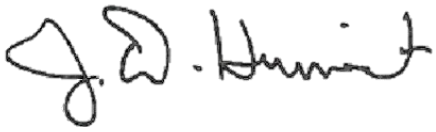
Table 1. Project Components for Each Base

Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. We would greatly appreciate if you would let Ms. Roxlau know the best way to contact you and/or your representative so we can ensure you receive all Project-related communications. Also, please let us know your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

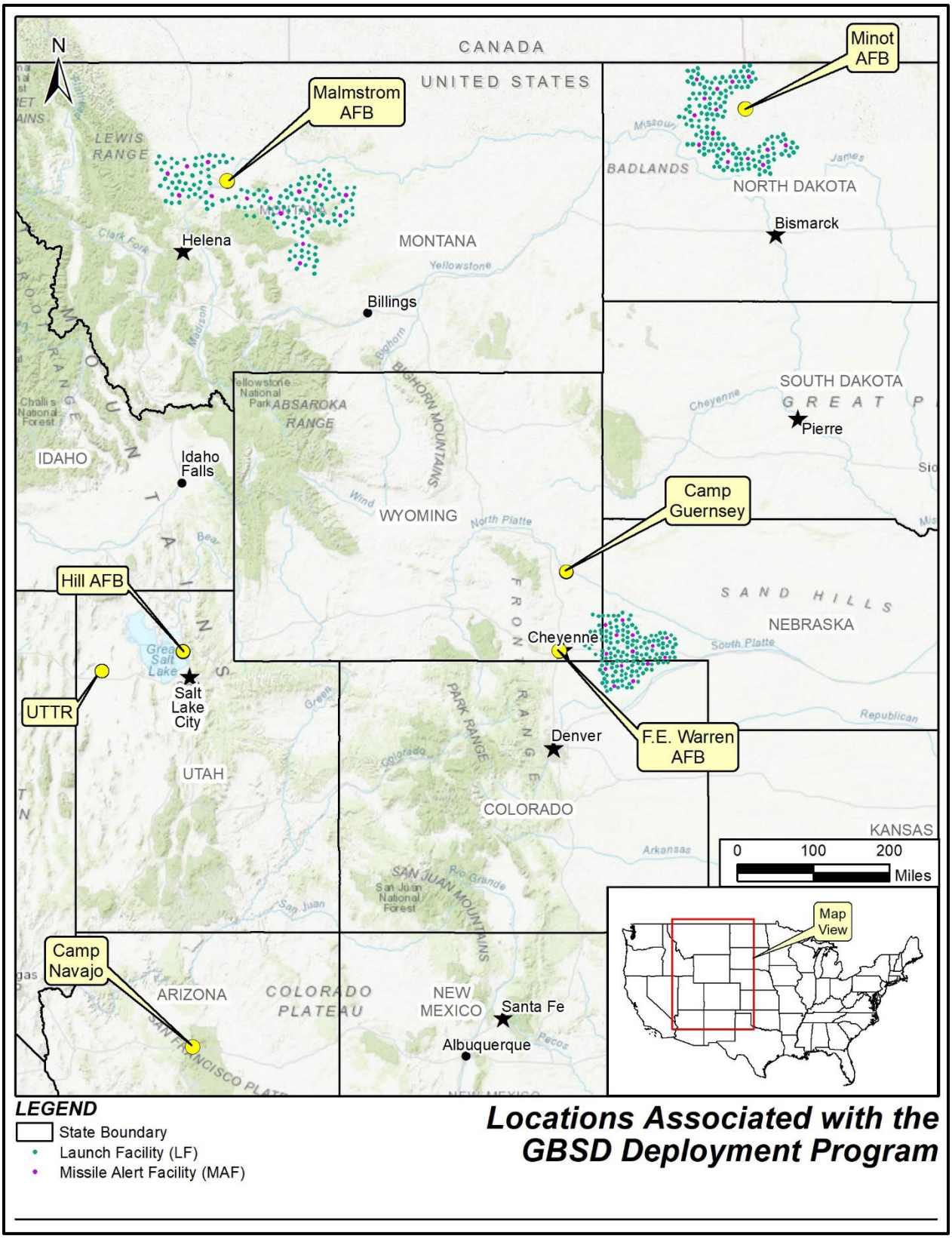
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Jessica Bush, Deputy SHPO, State Archaeologist
Laura Evilsizer, Compliance Officer


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
PARK RANGE
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

Big Sky. Big Land. Big History.
Montana
Historical Society

Historic Preservation
Museum
Outreach & Interpretation
Publications
Research Center

June 2, 2020

James D. Hunsicker
Air Force Global Strike Command
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Re: Decommissioning of Minuteman III Compliance and Consultation

Dear Mr. Hunsicker:

Thank you for your letter (received June 1, 2020) regarding the deployment of the Ground Based Strategic Deterrent intercontinental ballistic missile and decommissioning and disposal of the Minuteman III intercontinental ballistic missile.

Laura Evilsizer, the Montana State Historic Preservation Office's Review and Compliance Officer, will be our office's point of contact for this project her phone number is (406) 444-7719 and her email address is Laura.Evilsizer@MT.Gov. Our office requests project-related communications be sent as hard copies. Consultation requests for site eligibility or project effects will also need to be sent electronically. Information regarding this can be found on our website https://mhs.mt.gov/Shpo/ReviewComp. We have video conferencing capabilities available as needed. Our office is currently fully operational, and we are not experiencing any delays due to the COVID-19 health situation. A copy of this letter will be sent to Ms. Roxlau's email address, as you requested.

The Minuteman IIIs and their associated facilities are an important part of both National History and Montana State History. Thank you for engaging with our office early, and we look forward to being involved as you move forward on this undertaking

Sincerely,

Laura Evilsizer

Laura Evilsizer, M.A.
Review and Compliance Officer
Montana State Historic Preservation Office

CC: Ms. Kathy Roxlau of Tetra Tech, Inc. at Kathy.roxlau@tetratech.com

FILE: DOD/Air Force – 2020 - 2020060107

225 North Roberts Street
P.O. Box 201201
Helena, MT 59620-1201
(406) 444-2694
(406) 444-2696 FAX
montanahistoricalsociety.org

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Trevor Jones
Director, State Historic Preservation Officer
Nebraska State Historical Society State Historic Preservation Office
P.O. Box 82554
Lincoln NE 68501

Dear Mr. Jones

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage your office during the development of the environmental analysis.

Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate consultation with you regarding undertakings that will be identified for the Project and potential effects to properties listed on or eligible for listing in the National Register of Historic Places (historic properties). The Air Force is engaging early with the State Historic Preservation Officers from all involved states as it formulates the Project and begins to define the Areas of Potential Effects (APEs).

The Air Force will be requesting yours or your staff's participation in multiple consultations as the Project is planned and then analyzed for its effects to historic properties. Anticipated future efforts for

which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of historic properties, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of Phase I cultural resources inventory of locations planned for construction, renovation, and demolition activities. The Air Force wishes to meet with you to present the Project in further detail.

The Air Force is coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service. The Air Force is also initiating consultation on the potential effects of the Project with federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

The Air Force looks forward to working with you and your staff throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

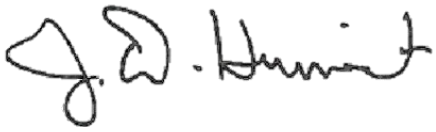
Table 1. Project Components for Each Base

Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. We would greatly appreciate if you would let Ms. Roxlau know the best way to contact you and/or your representative so we can ensure you receive all Project-related communications. Also, please let us know your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

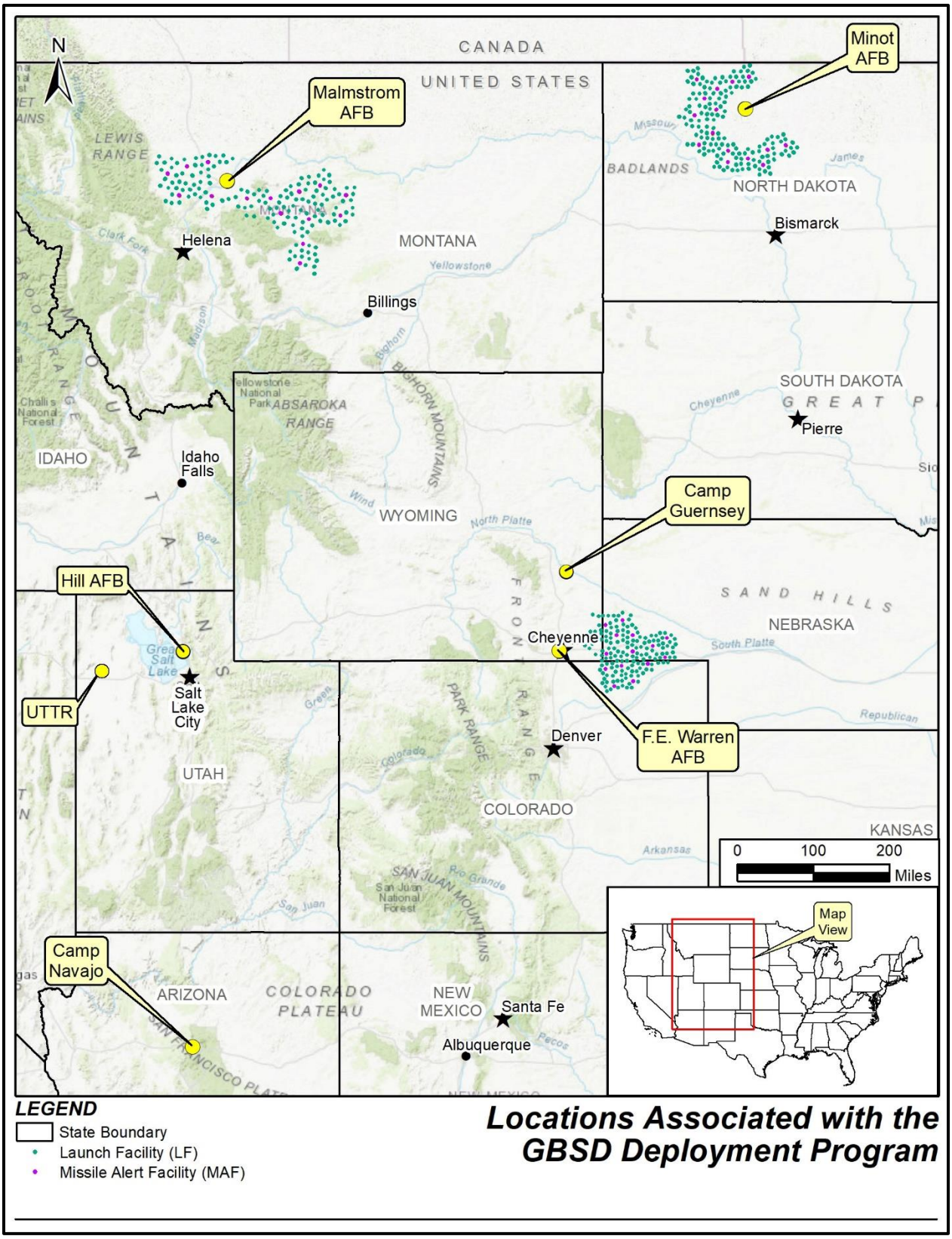
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Jill Dolberg, Deputy SHPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
PARK RANGE
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

History NEBRASKA

Preserving the past. Building the future.

June 18, 2020

Lt. Col. James D. Hunsicker
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB, LA 71110

RE: Deployment of GBSD ICBMs and Decommissioning/disposal of Minuteman II ICBMs in Nebraska
HP# 2006-113-01

Dear Lt. Col. Hunsicker,

Thank you for initiating consultation with us regarding the deployment of Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM), and the decommissioning and disposal of the Minuteman II ICBM sites in Nebraska. As you know, our comment on this project and its potential to affect historic properties is required by Section 106 of the National Historic Preservation Act of 1966, as amended, and implementing regulations 36 CFR Part 800.

The Nebraska State Historic Preservation Office will be pleased to consult with you and your team on this matter. From what you have stated in your letter, we will consult on the development of programmatic alternatives for addressing Minuteman III missile facilities, identify and evaluate historic properties, assess effects, and plan and implement mitigation measures. We will collaborate on planning the implementation of a Phase I cultural resources inventory of locations planned for construction, renovation and demolition activities.

We are able to participate in any number of conferencing technologies, including conference calls, Zoom, Microsoft Teams, or WebEx. If you have any questions, please contact me at 402-471-4773 or via email at jill.dolberg@nebraska.gov.

Sincerely,

Jill E. Dolberg
Deputy State Historic Preservation Officer
History Nebraska

CC: Ms. Kathy Roxlau, Tetra Tech, Inc. via email

1500 R Street
Lincoln, NE 68508-1651
P: 402.471.3270
P: 800.833.6747
F: 402.471.3100
history.nebraska.gov

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Claudia Berg
Director, State Historic Preservation Officer
State Historic Preservation Office, Archaeological and Historic Preservation Division
State Historical Society of North Dakota
612 East Boulevard Avenue
Bismarck ND 58505

Dear Ms. Berg

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage your office during the development of the environmental analysis.

Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate consultation with you regarding undertakings that will be identified for the Project and potential effects to properties listed on or eligible for listing in the National Register of Historic Places (historic properties). The Air Force is engaging early with the State Historic Preservation Officers from all involved states as it formulates the Project and begins to define the Areas of Potential Effects (APEs).

The Air Force will be requesting yours or your staff's participation in multiple consultations as the Project is planned and then analyzed for its effects to historic properties. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of historic properties, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of Phase I cultural resources inventory of locations planned for construction, renovation, and demolition activities. The Air Force wishes to meet with you to present the Project in further detail.

The Air Force is coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service. The Air Force is also initiating consultation on the potential effects of the Project with federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

The Air Force looks forward to working with you and your staff throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from

each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

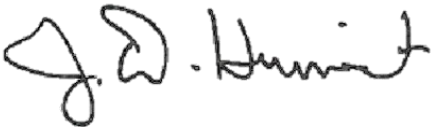
Table 1. Project Components for Each Base

Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. We would greatly appreciate if you would let Ms. Roxlau know the best way to contact you and/or your representative so we can ensure you receive all Project-related communications. Also, please let us know your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

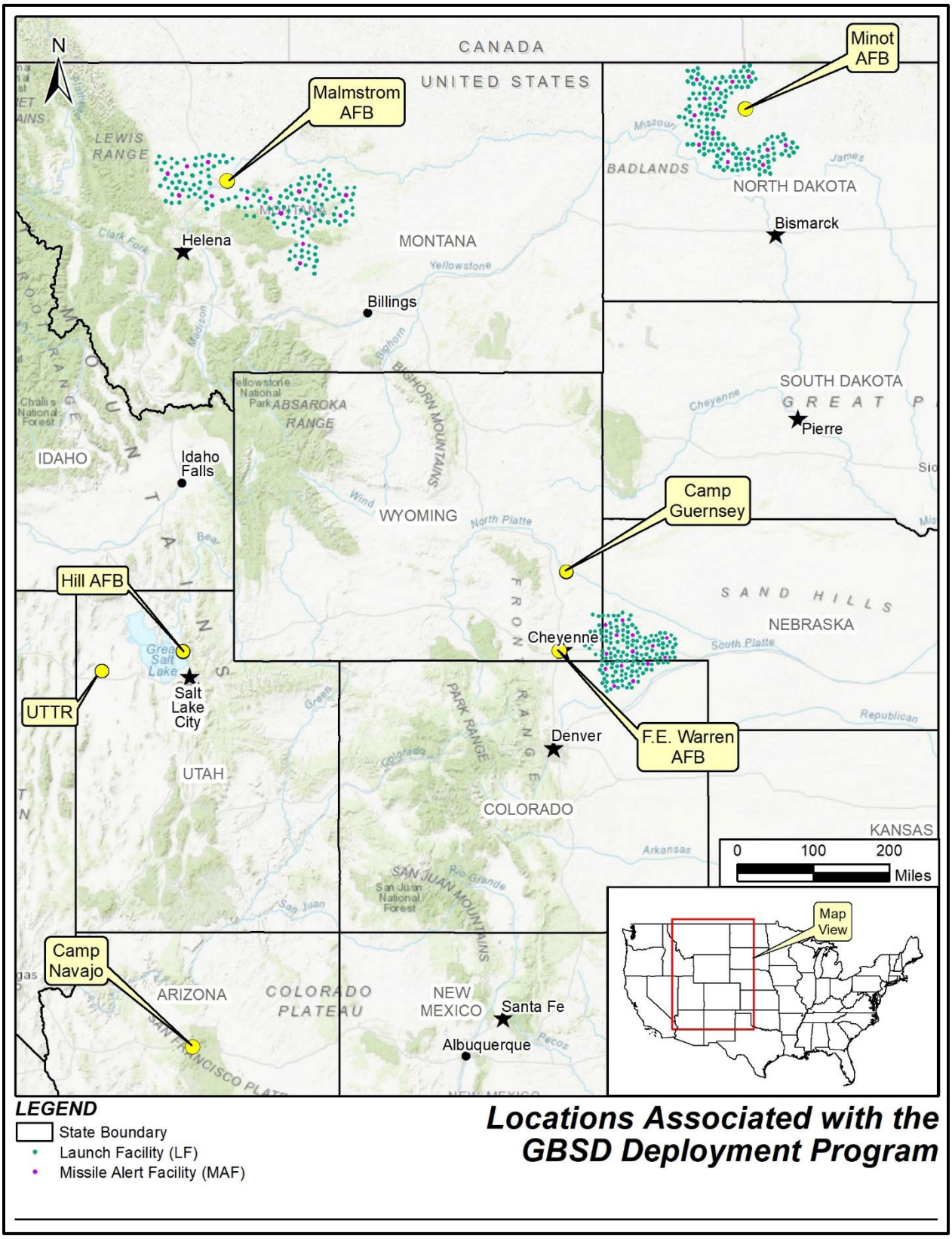
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Fern Swenson, Deputy SHPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
PARK RANGE
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

GBSD project

Meidinger, Lorna B. <lbmeidinger@nd.gov>

Mon 6/1/2020 1:58 PM

To: Roxlau, Kathy <Kathy.Roxlau@tetratech.com>

Good afternoon Ms. Roxlau,

We received a letter from James D. Hunsicker of the Air Force Global Strike Command requesting we respond to you with contact information for the USAF GBSD deployment project. I will be the primary contact in North Dakota and our NDSHPO Reference number for this project is 20-0226. On a related note, Claudia Berg will be retiring effective June 30, 2020 and her replacement as SHPO will be Dr. Bill Peterson.

Lorna Meidinger
Historic Preservation Specialist
State Historical Society of North Dakota
612 E Boulevard Ave
Bismarck, ND 58505
701.328.2089

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chris Merritt
State Historic Preservation Officer
Utah Division of State History State Historic Preservation Office
300 Rio Grande Street
Salt Lake City UT 84101

Dear Dr. Merritt

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage your office during the development of the environmental analysis.

Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate consultation with you regarding undertakings that will be identified for the Project and potential effects to properties listed on or eligible for listing in the National Register of Historic Places (historic properties). The Air Force is engaging early with the State Historic Preservation Officers from all involved states as it formulates the Project and begins to define the Areas of Potential Effects (APEs).

The Air Force will be requesting yours or your staff's participation in multiple consultations as the Project is planned and then analyzed for its effects to historic properties. Anticipated future efforts for

which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of historic properties, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of Phase I cultural resources inventory of locations planned for construction, renovation, and demolition activities. The Air Force wishes to meet with you to present the Project in further detail.

The Air Force is coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service. The Air Force is also initiating consultation on the potential effects of the Project with federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

The Air Force looks forward to working with you and your staff throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

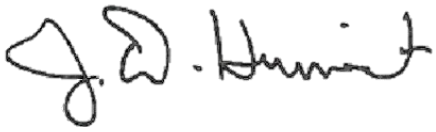
Table 1. Project Components for Each Base

Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. We would greatly appreciate if you would let Ms. Roxlau know the best way to contact you and/or your representative so we can ensure you receive all Project-related communications. Also, please let us know your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

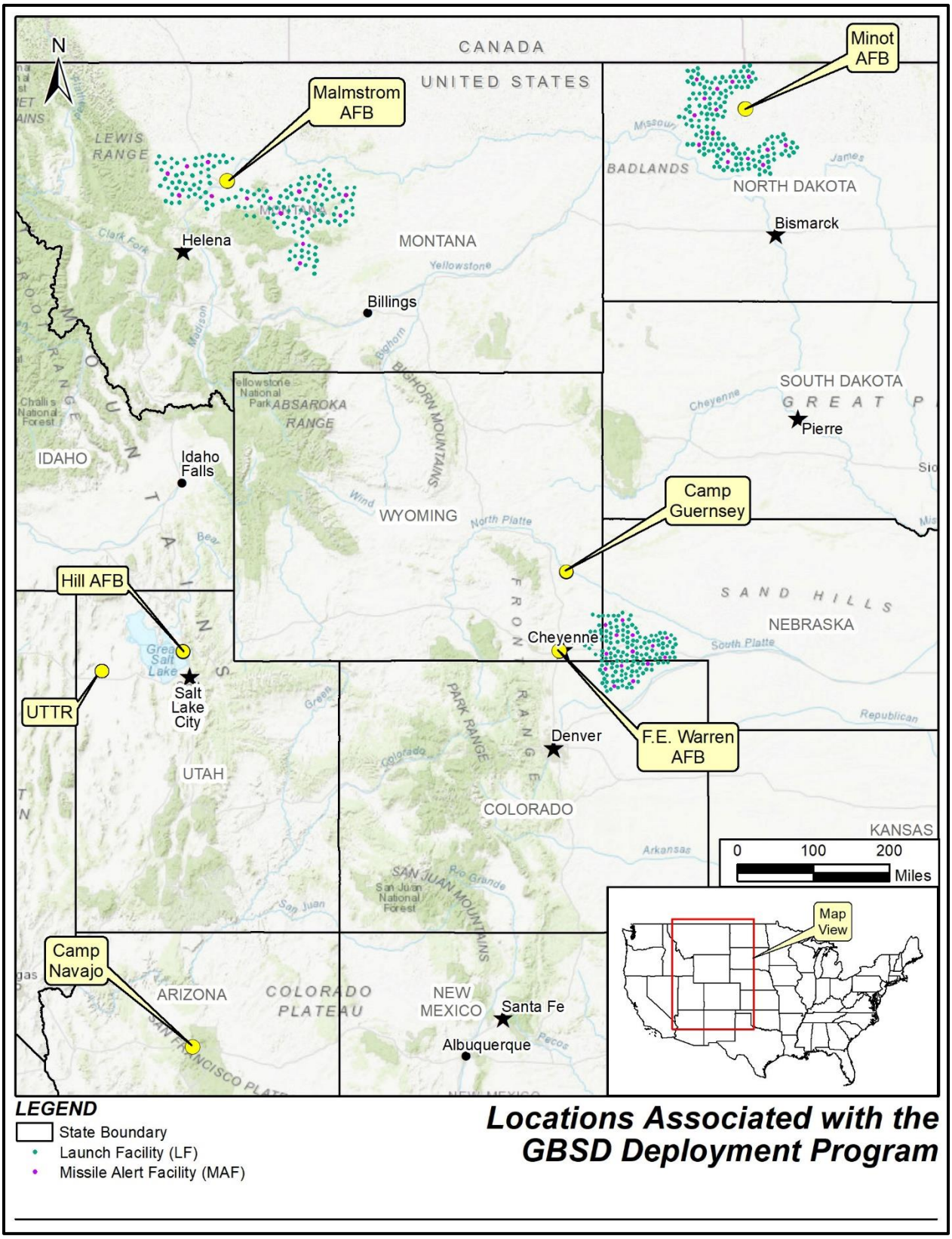
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Chris Hanson, Deputy SHPO, Compliance
Savanna Agardy, Compliance Archaeologist


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
PARK RANGE
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Jill Remington Love
Executive Director
Department of
Heritage & Arts

Utah Division of State History

Christopher Merritt
State Historic Preservation Officer

Kevin Fayles
Interim Director

June 11, 2020

Kathy Roxlau
Tetra Tech
3201 Airpark Drive, Suite 108
Santa Maria, CA 93455

RE: Consultation Initiation for the US Air Force Minuteman III ICMB Project

For future correspondence, please reference Case No. 20-2245

Dear Ms. Roxlau,

The Utah State Historic Preservation Office (SHPO) received the consultation initiation request from the United States Air Force regarding the Minuteman III ICMB Project on June 11, 2020.

We look forward to consulting with your office and the US Air Force on the above-reference undertaking, which will take place at Hill Air Force Base and the Utah Test and Training Range in Utah.

Further consultation for this project should be take place via the Utah SHPO's e106 system or by email, as we no longer accept paper consultation requests received by mail. I have created an account for you in our e106 system, which can be accessed through this URL: https://community.utah.gov/e106/. You should have received a notification email of your account creation that will allow you to log into e106. We have several "How To" guides available on our e106 website (located here: https://community.utah.gov/e106/s/CaseSubmissionInstructions) that provide step-by-step instructions on how to use the e106 system. However, if you need assistance, do not hesitate to reach out with any questions you may have. I will be your main point of contact for this undertaking as the Utah SHPO Compliance Archaeologist, and I have full capability to participate in video conferences and other forms of online communication.

This letter serves as our comment on initiation on the consultation process specified in §36CFR800.4. If you have questions, please contact me at 801-245-7246 or by email at sagardy@utah.gov.

Sincerely,

Savanna Agardy
Compliance Archaeologist

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Mary Hopkins
State Historic Preservation Officer
Wyoming State Historic Preservation Office
2301 Central Avenue, Barrett Building, Third Floor
Cheyenne WY 82002

Dear Ms. Hopkins

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage your office during the development of the environmental analysis.

Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate consultation with you regarding undertakings that will be identified for the Project and potential effects to properties listed on or eligible for listing in the National Register of Historic Places (historic properties). The Air Force is engaging early with the State Historic Preservation Officers from all involved states as it formulates the Project and begins to define the Areas of Potential Effects (APEs).

The Air Force will be requesting yours or your staff's participation in multiple consultations as the Project is planned and then analyzed for its effects to historic properties. Anticipated future efforts for

which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of historic properties, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of Phase I cultural resources inventory of locations planned for construction, renovation, and demolition activities. The Air Force wishes to meet with you to present the Project in further detail.

The Air Force is coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service. The Air Force is also initiating consultation on the potential effects of the Project with federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

The Air Force looks forward to working with you and your staff throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

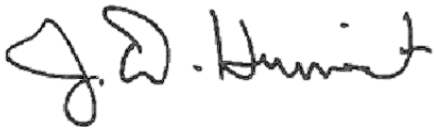
Table 1. Project Components for Each Base

Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. We would greatly appreciate if you would let Ms. Roxlau know the best way to contact you and/or your representative so we can ensure you receive all Project-related communications. Also, please let us know your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

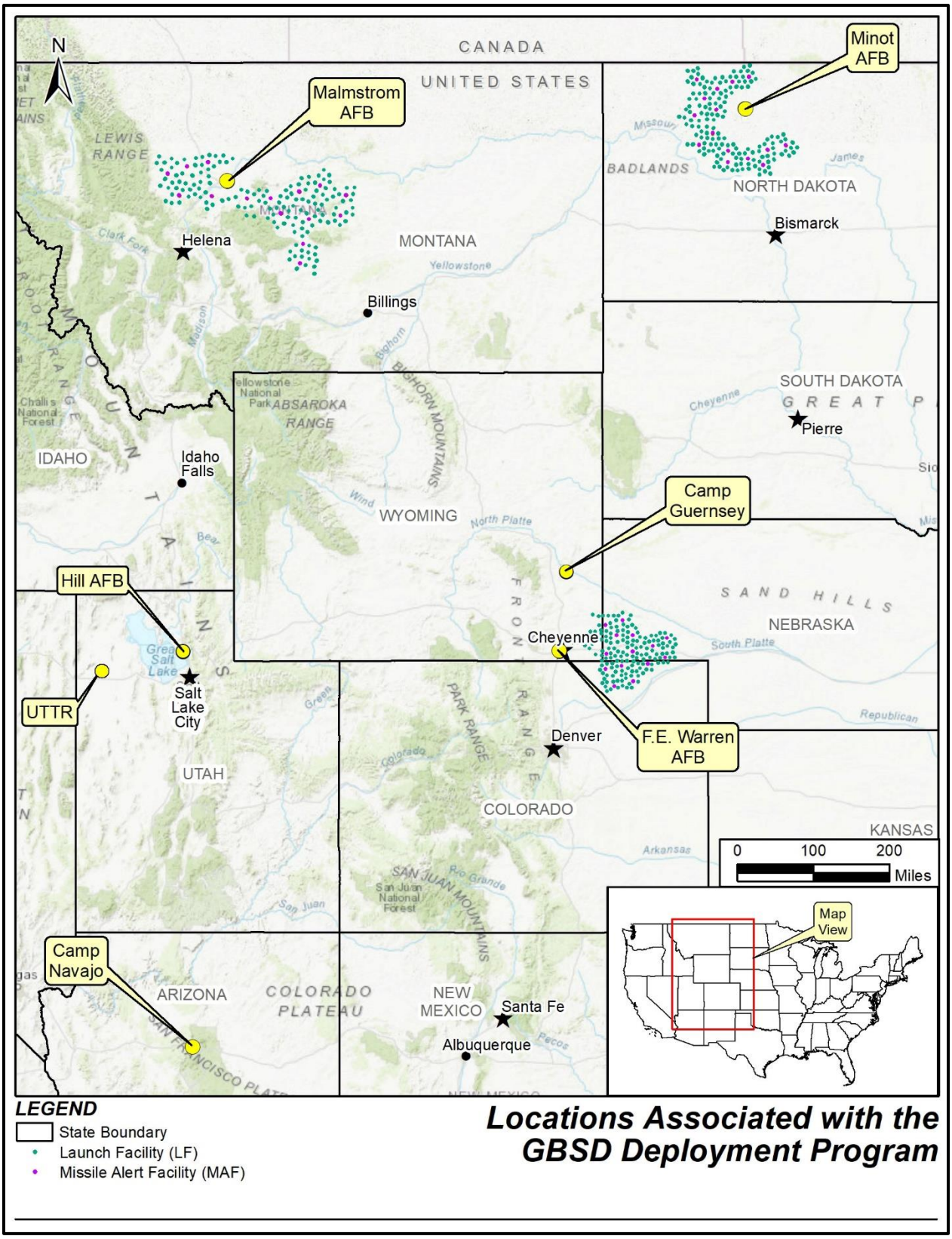
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Heather Rockwell, Deputy SHPO
Richard Currit, Senior Archaeologist


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
PARK RANGE
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

WYOMING STATE Historic Preservation OFFICE

June 04, 2020

James D. Hunsicker, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB, LA 71110

re: Planning Efforts for the Deployment of Ground-Based Strategic Deterrent Intercontinental Ballistic Missile and Decommissioning and Disposal of the Minuteman III, SHPO # DBPR_WY_2020_605

Dear Mr. Hunsicker:

Thank you for consulting with the Wyoming State Historic Preservation Office (SHPO) regarding the above referenced planning effort. We have reviewed the planning effort outlined in your letter dated May 19, 2020, and agree that yes, we want you to continue consulting with us regarding both F.E. Warren AFB and Camp Guernsey, Wyoming. This letter should be retained in your files as documentation of a SHPO response. We look forward to continuing to work with your office on this project. Please refer to SHPO project # DBPR_WY_2020_605 on any future correspondence regarding this undertaking.

If you have any questions, please contact me at 307-777-7566.

Sincerely,

Linda Kiisk

Linda Kiisk

Page intentionally left blank.

C.3 LETTERS INVITING TRIBES TO PARTICIPATE IN SECTION 106 CONSULTATION

Page intentionally left blank.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman & THPO Bobby Komardley
Apache Tribe of Oklahoma
P.O. Box 1330, 511 East Colorado Street
Anadarko OK 73005

Dear Chairman & THPO Komardley

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Apache Tribe of Oklahoma throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Apache Tribe of Oklahoma enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

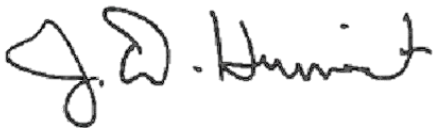
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Apache Tribe of Oklahoma throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

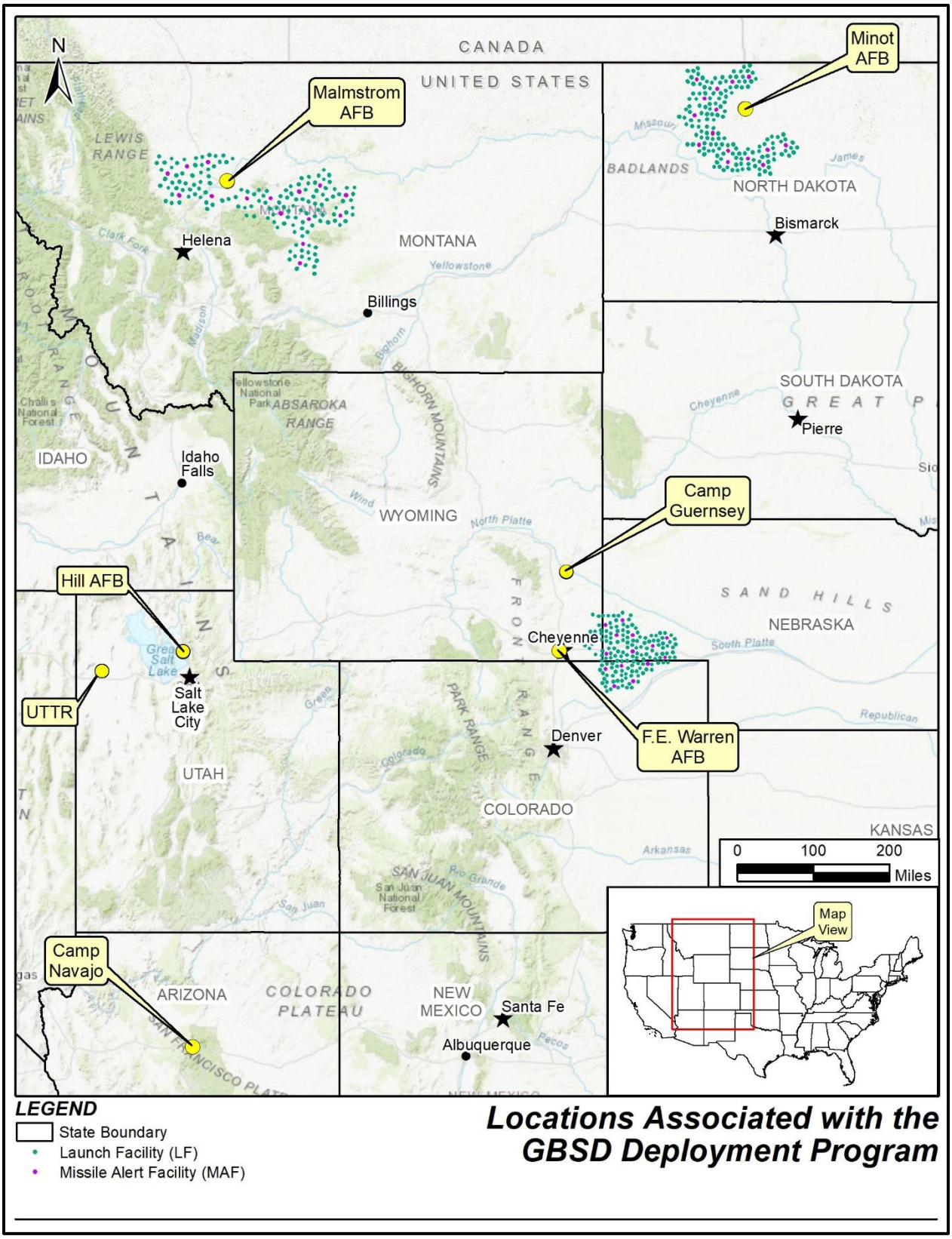
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Crystal Lightfoot, Culture Program Coordinator


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Floyd Azure
Assiniboine and Sioux Tribes
Fort Peck Indian Reservation
P.O. Box 1027, 501 Medicine Bear Road
Poplar MT 59255

Dear Chairman Azure

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Assiniboine and Sioux Tribes throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Assiniboine and Sioux Tribes enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

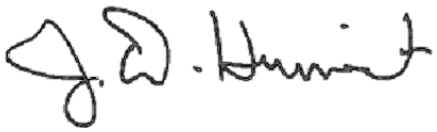
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Assiniboine and Sioux Tribes throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

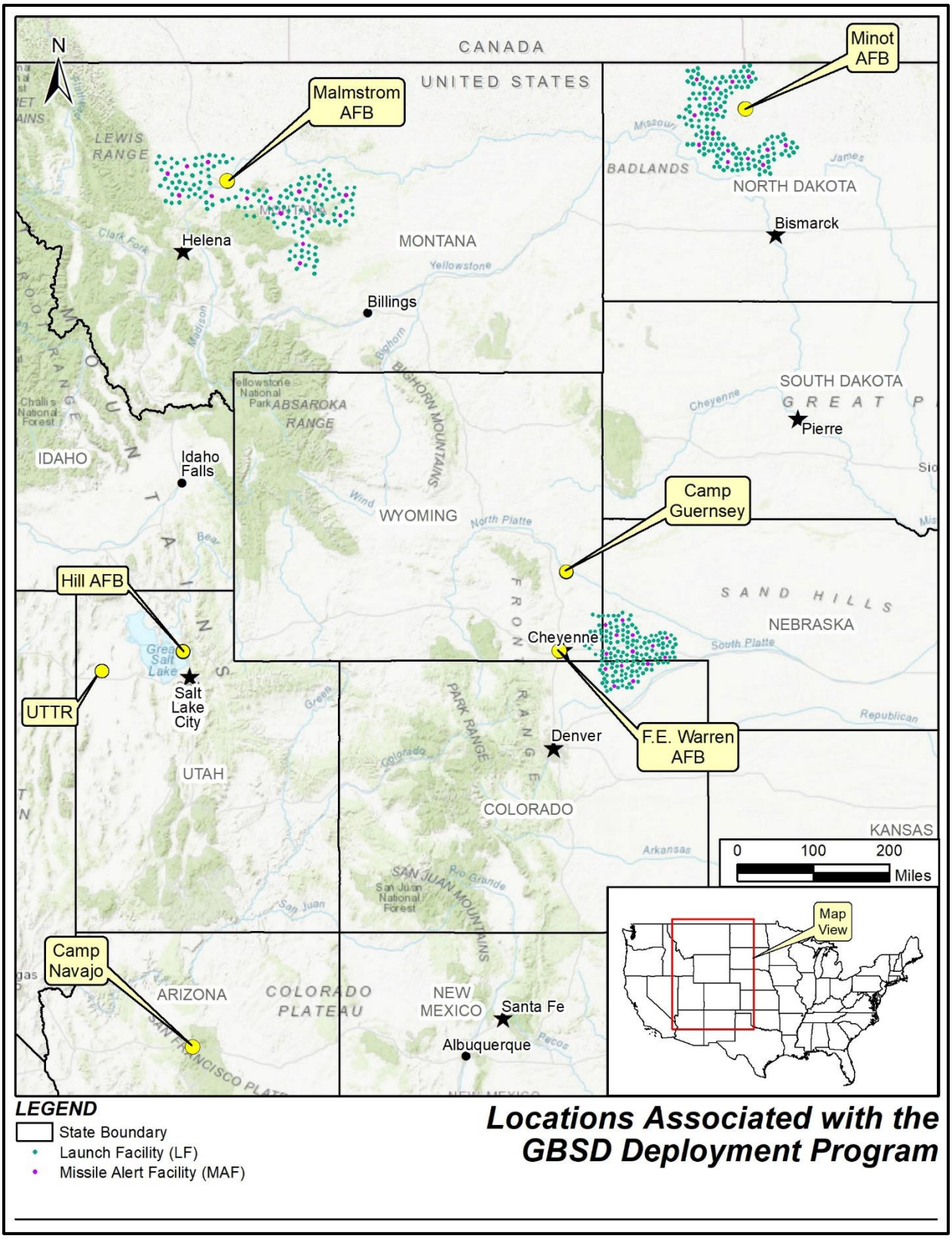
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Sydne Campbell, Secretary
Dyan Youpee, THPO
Raymond “Abby” Ogle, THPO Field Manager


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Timothy Davis
Blackfeet Tribe
Blackfeet Indian Reservation
P.O. Box 850, 640 All Chiefs Road, Tribal Headquarters
Browning MT 59417

Dear Chairman Davis

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Blackfeet Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Blackfeet Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

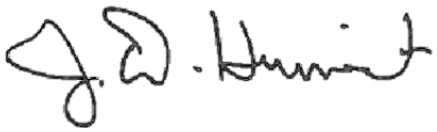
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Blackfeet Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

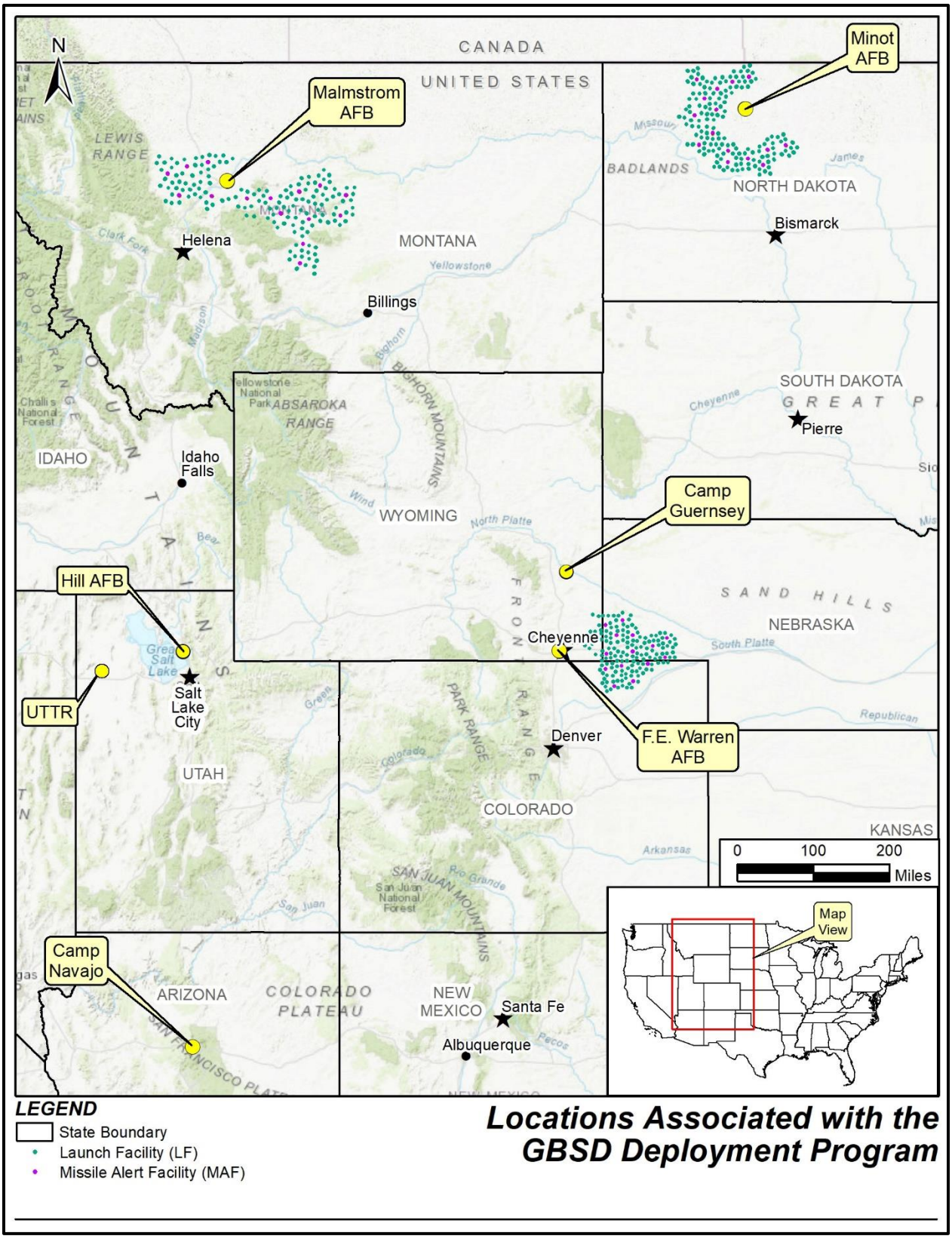
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Stacey Keller, Secretary
John Murray, THPO
Virgil Edwards, Deputy THPO
Kendall Edmo, THPO Staff
Gerald Wagner, Environmental Office


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Tribal Chairwoman Cathy Chavers
Bois Forte Band of Chippewa
Bois Forte Indian Reservation
P.O. Box 16
Nett Lake MN 55772

Dear Tribal Chairwoman Chavers

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Bois Forte Band of Chippewa throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Bois Forte Band of Chippewa enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

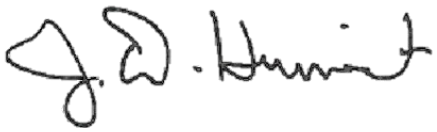
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Bois Forte Band of Chippewa throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

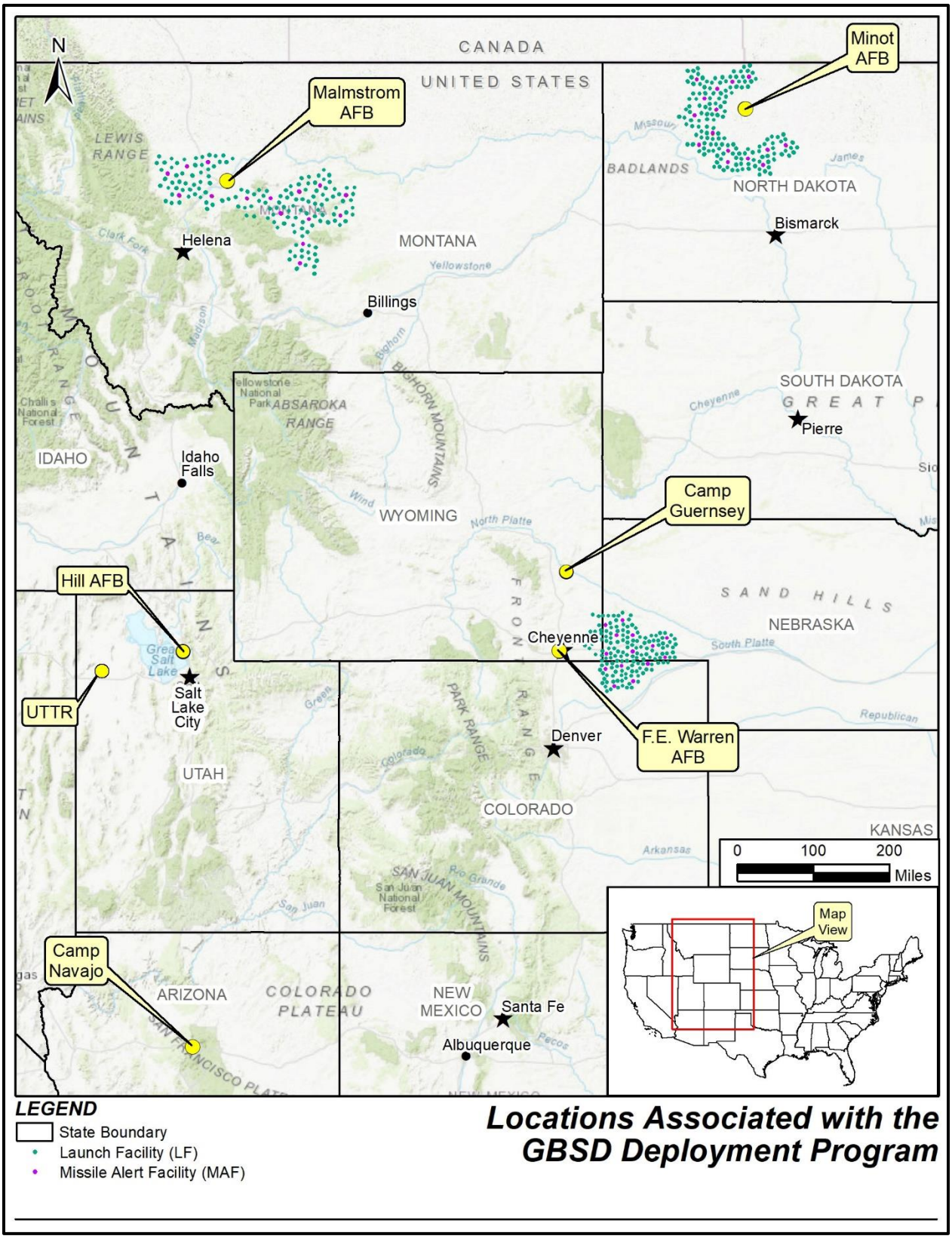
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Bev Miller, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Governor Reggie Wassana
Cheyenne and Arapaho Tribes of Oklahoma
P.O. Box 38
Concho OK 73022

Dear Governor Wassana

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Cheyenne and Arapaho Tribes of Oklahoma throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Cheyenne and Arapaho Tribes of Oklahoma enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

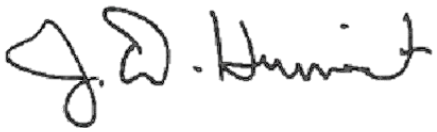
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Cheyenne and Arapaho Tribes of Oklahoma throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

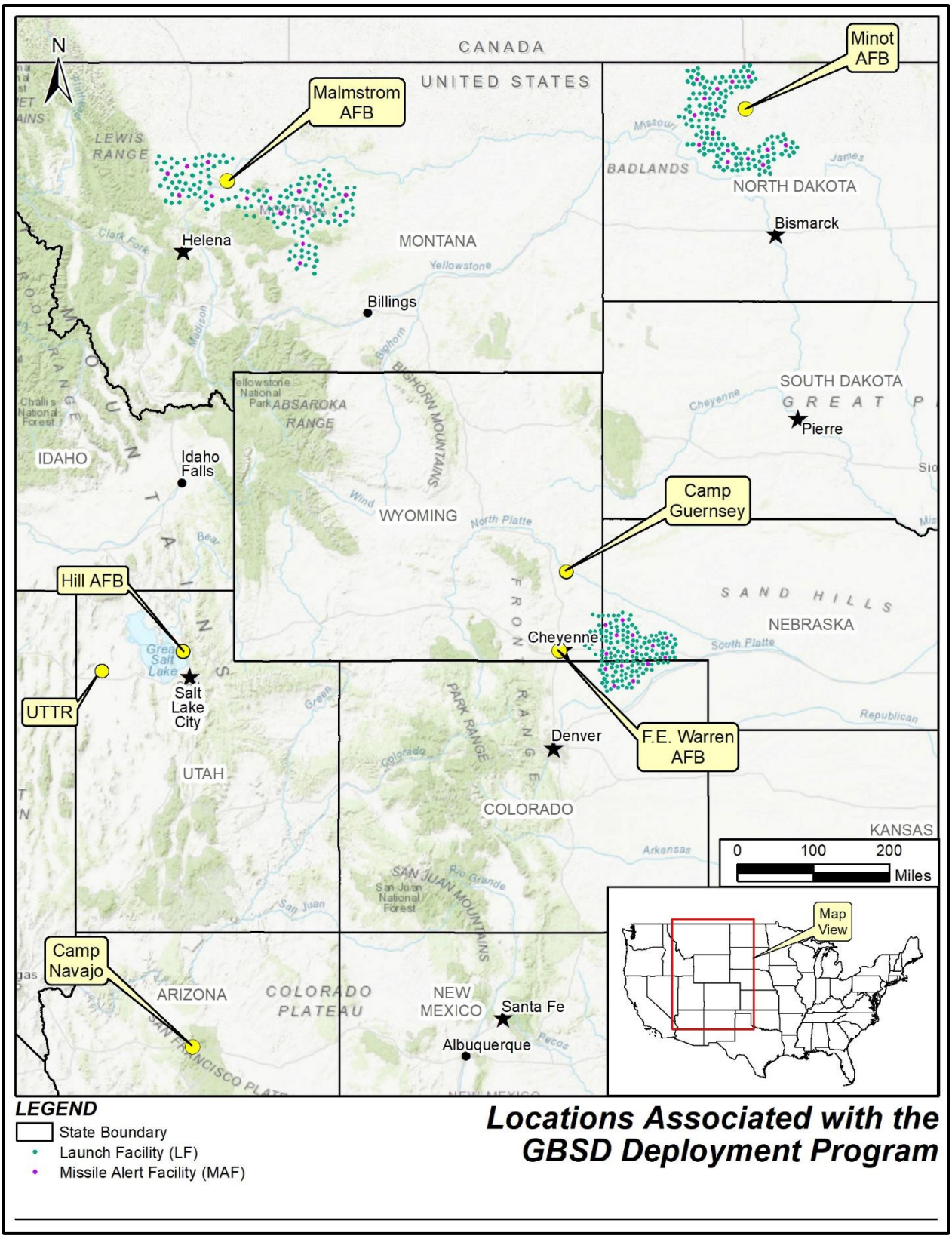
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Max Bear, Director, Cultural, Acting THPO
Christopher Rednose, THPO Technical Assistant
Micah Looper, THPO Research Analyst


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Harold C. Frazier
Cheyenne River Sioux Tribe
Cheyenne River Reservation
P.O. Box 590
Eagle Butte SD 57625

Dear Chairman Frazier

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Cheyenne River Sioux Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Cheyenne River Sioux Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

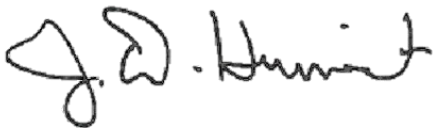
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Cheyenne River Sioux Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

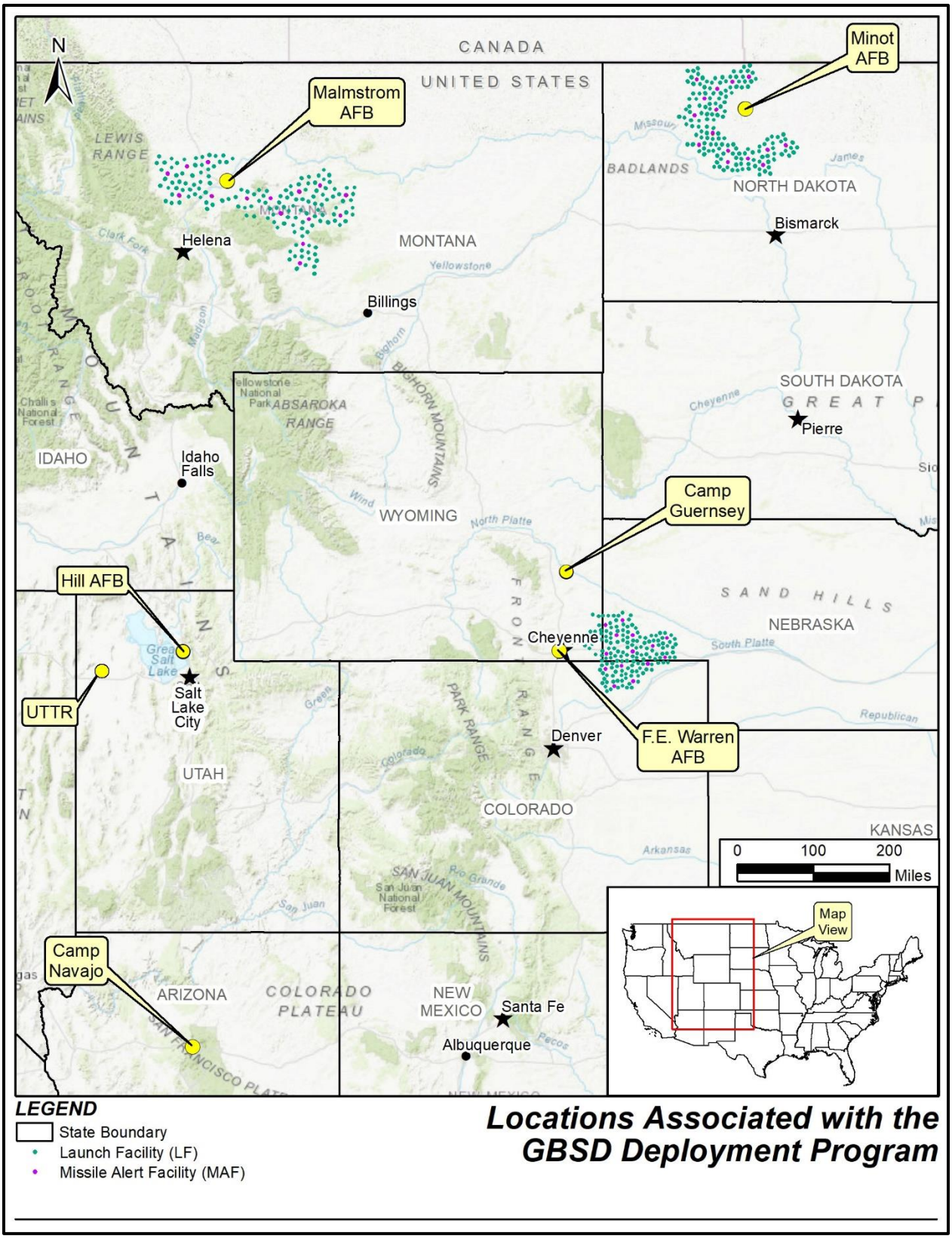
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Matthew Zogel, Scheduling Assistant
Steve Vance, THPO
Dawnita Knight, Tribal Archaeologist


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Harlan Baker
Chippewa Cree Tribe
Rocky Boy's Reservation
P.O. Box 544, 96 Clinic Road North
Box Elder MT 59521

Dear Chairman Baker

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Chippewa Cree Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Chippewa Cree Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

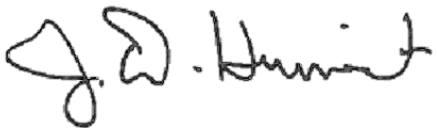
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Chippewa Cree Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

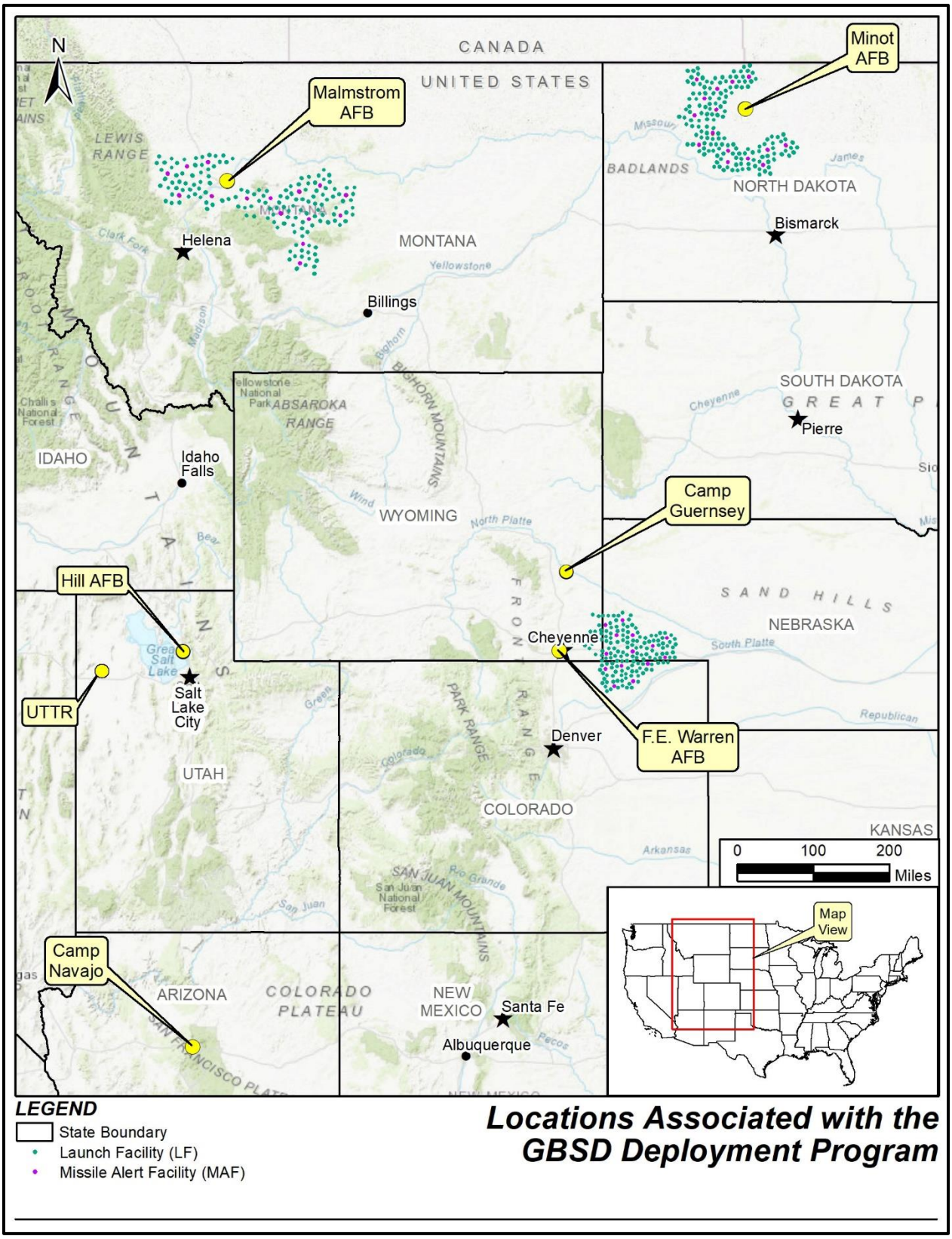
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Jonathan Windy Boy, THPO
Justin Moschelle, Tribal Archaeologist
Melody Henry Executive Assistant


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman William Nelson
Comanche Nation of Oklahoma
P.O. Box 908
Lawton OK 73502

Dear Chairman Nelson

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Comanche Nation of Oklahoma throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Comanche Nation of Oklahoma enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

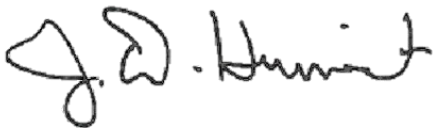
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Comanche Nation of Oklahoma throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

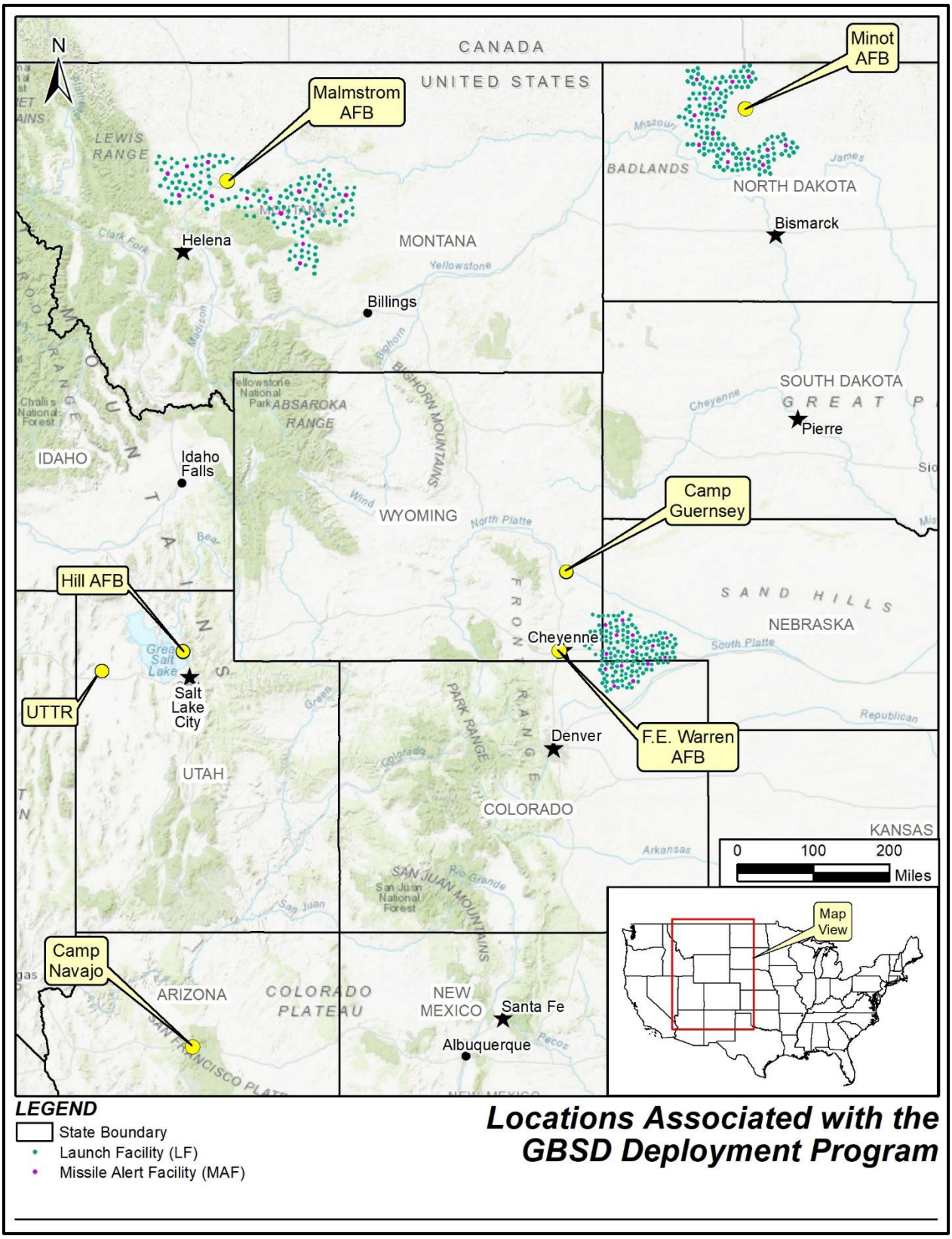
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Martina M. Callahan, THPO
Theodore Villicana, Historic Preservation


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairwoman Shelly Fyant
Confederated Salish and Kootenai Tribes
Flathead Reservation
P.O. Box 278
Pablo MT 59855

Dear Chairwoman Fyant

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Confederated Salish and Kootenai Tribes throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Confederated Salish and Kootenai Tribes enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

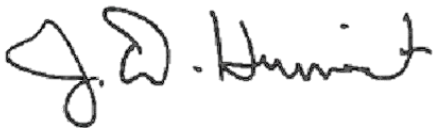
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Confederated Salish and Kootenai Tribes throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

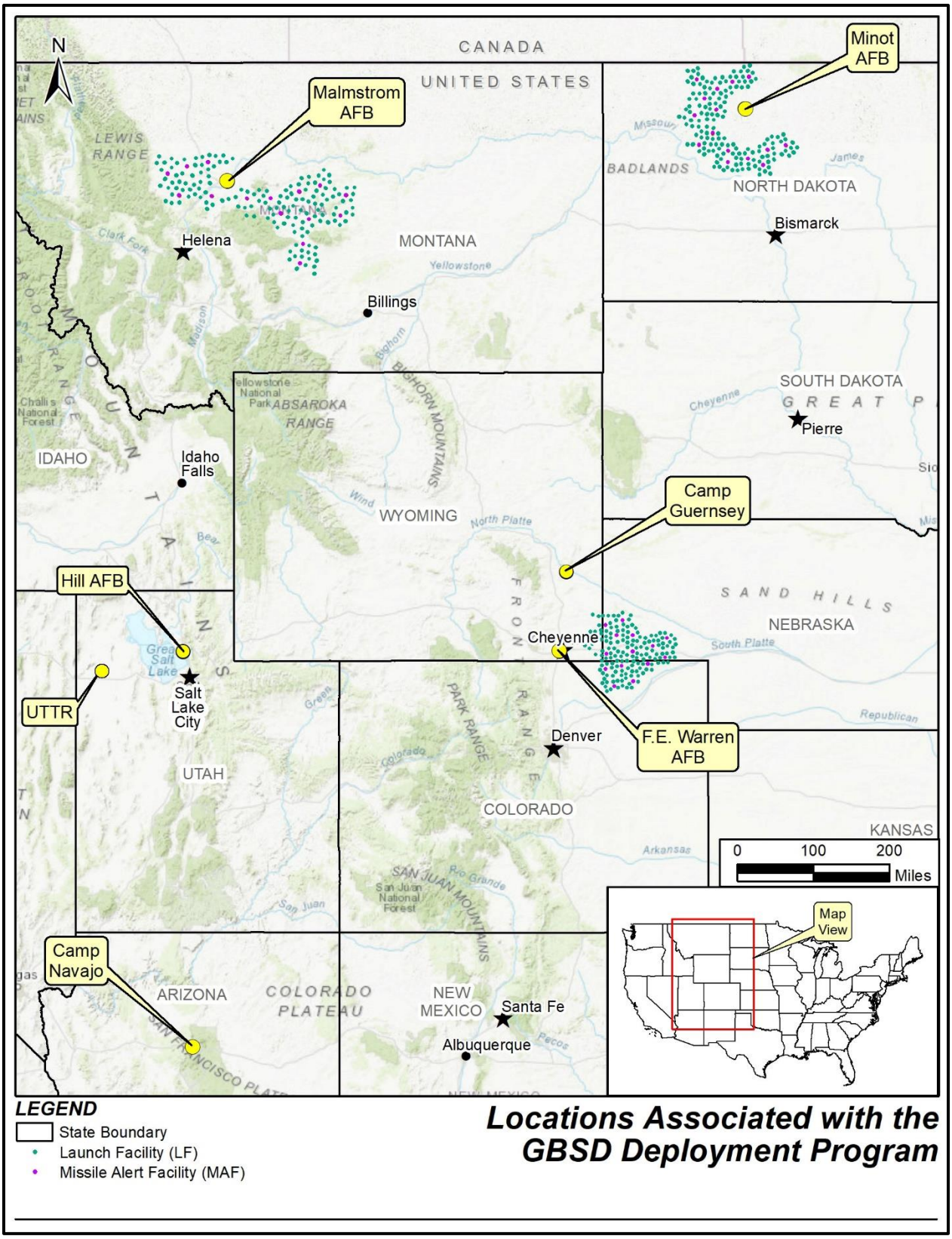
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Ellie Bundy, Secretary
Kyle Felsman, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Tribal Chairman Rupert Steele
Confederated Tribes of the Goshute Reservation
P.O. Box 6104, 195 Tribal Center Road
Ibapah UT 84034

Dear Tribal Chairman Steele

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Confederated Tribes of the Goshute Reservation throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Confederated Tribes of the Goshute Reservation enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

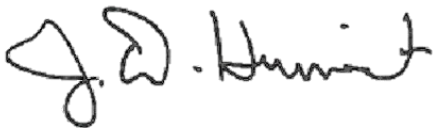
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Confederated Tribes of the Goshute Reservation throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

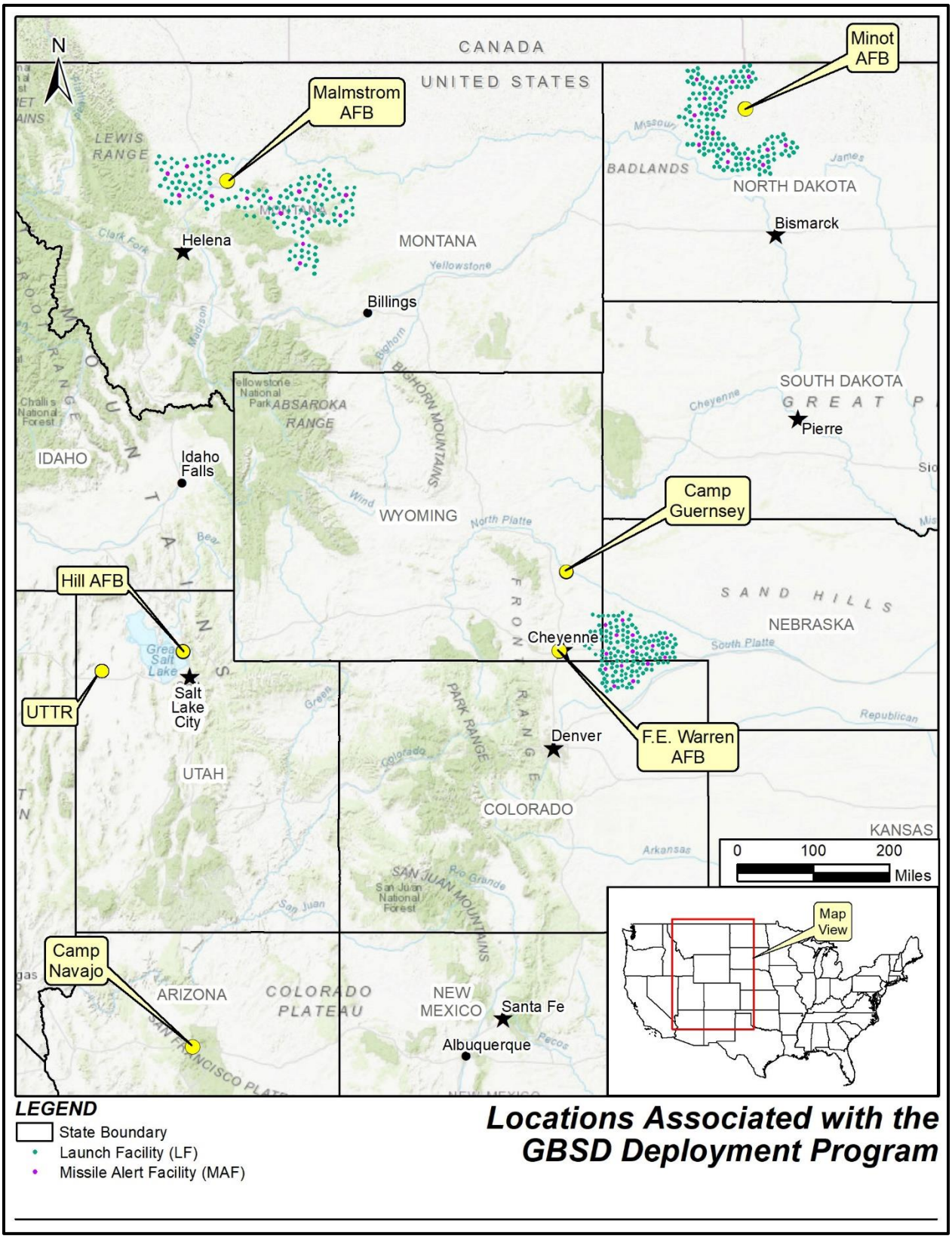
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Phyllis Naranjo, Secretary


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Lester Thompson, Jr.
Crow Creek Sioux Tribe
Crow Creek Indian Reservation
P.O. Box 50
Fort Thompson SD 57339

Dear Chairman Thompson

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Crow Creek Sioux Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Crow Creek Sioux Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

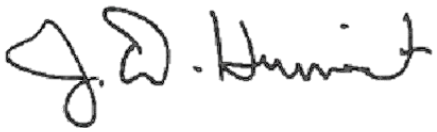
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Crow Creek Sioux Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

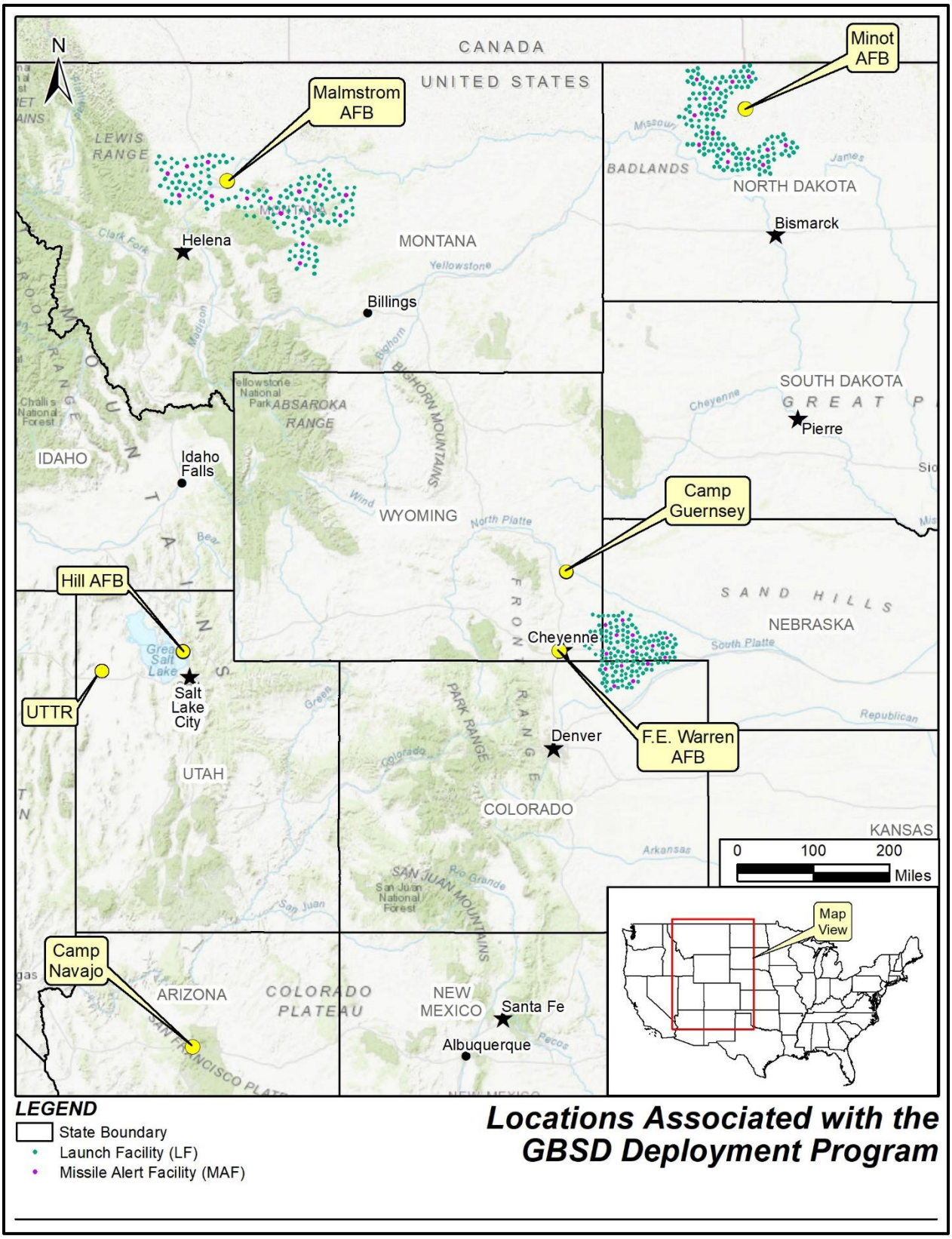
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Merle Marks, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Alvin Not Afraid, Jr.
Crow Tribe
Crow Indian Reservation
P.O. Box 159, Crow Tribe Executive Branch, Bacheeitche Avenue
Crow Agency MT 59022

Dear Chairman Not Afraid

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Crow Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Crow Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for

which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

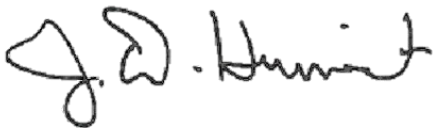
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Crow Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

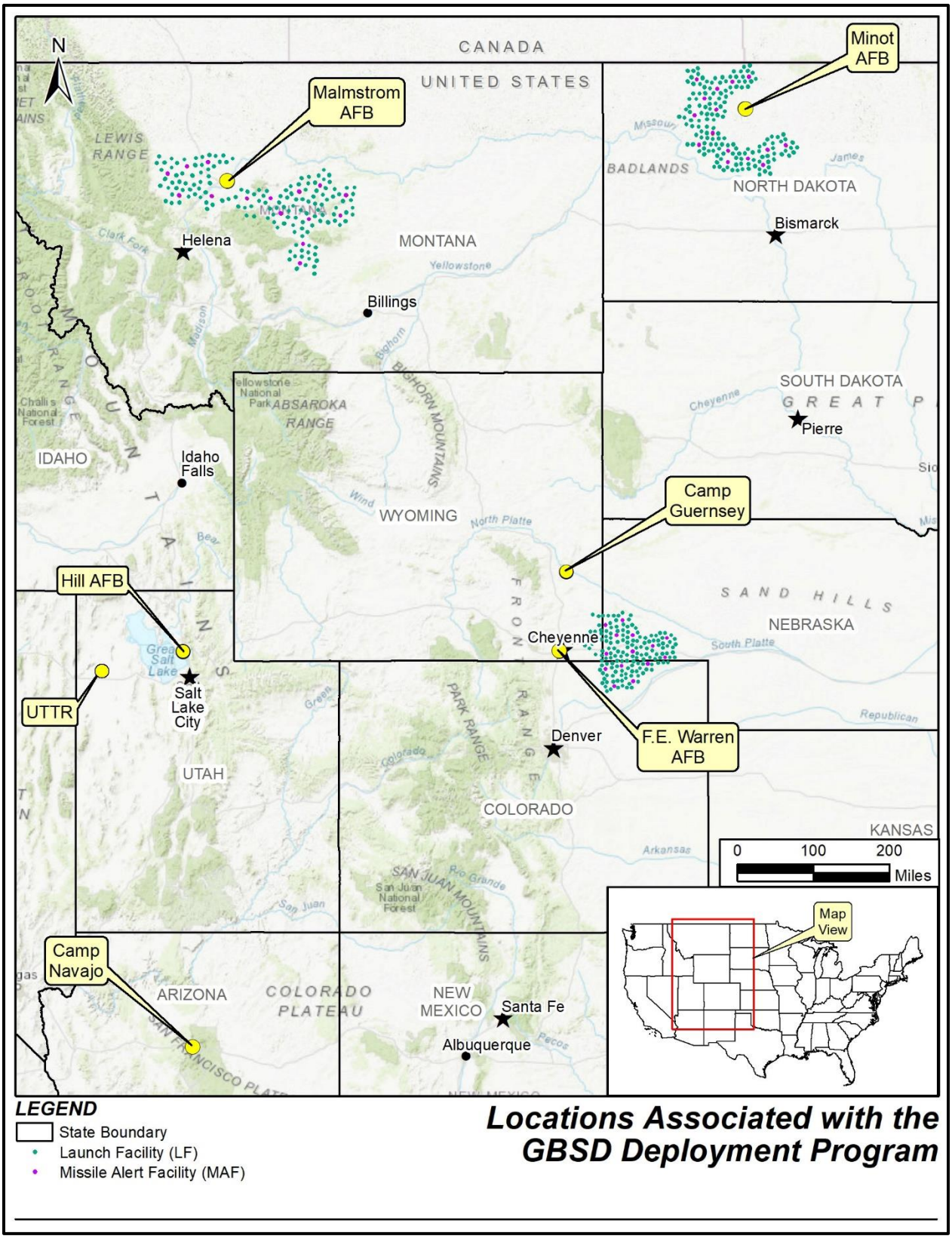
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: R. Knute Old Crow, Secretary
William Big Day, THPO Cabinet Head
Jolene White Clay, THPO Office Manager


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chair Rodney Mike
Duckwater Shoshone Tribe
Duckwater Reservation
P.O. Box 140068
Duckwater NV 89314

Dear Chair Mike

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Duckwater Shoshone Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Duckwater Shoshone Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

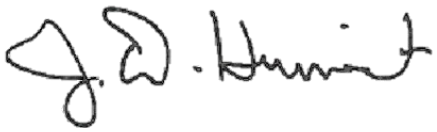
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Duckwater Shoshone Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

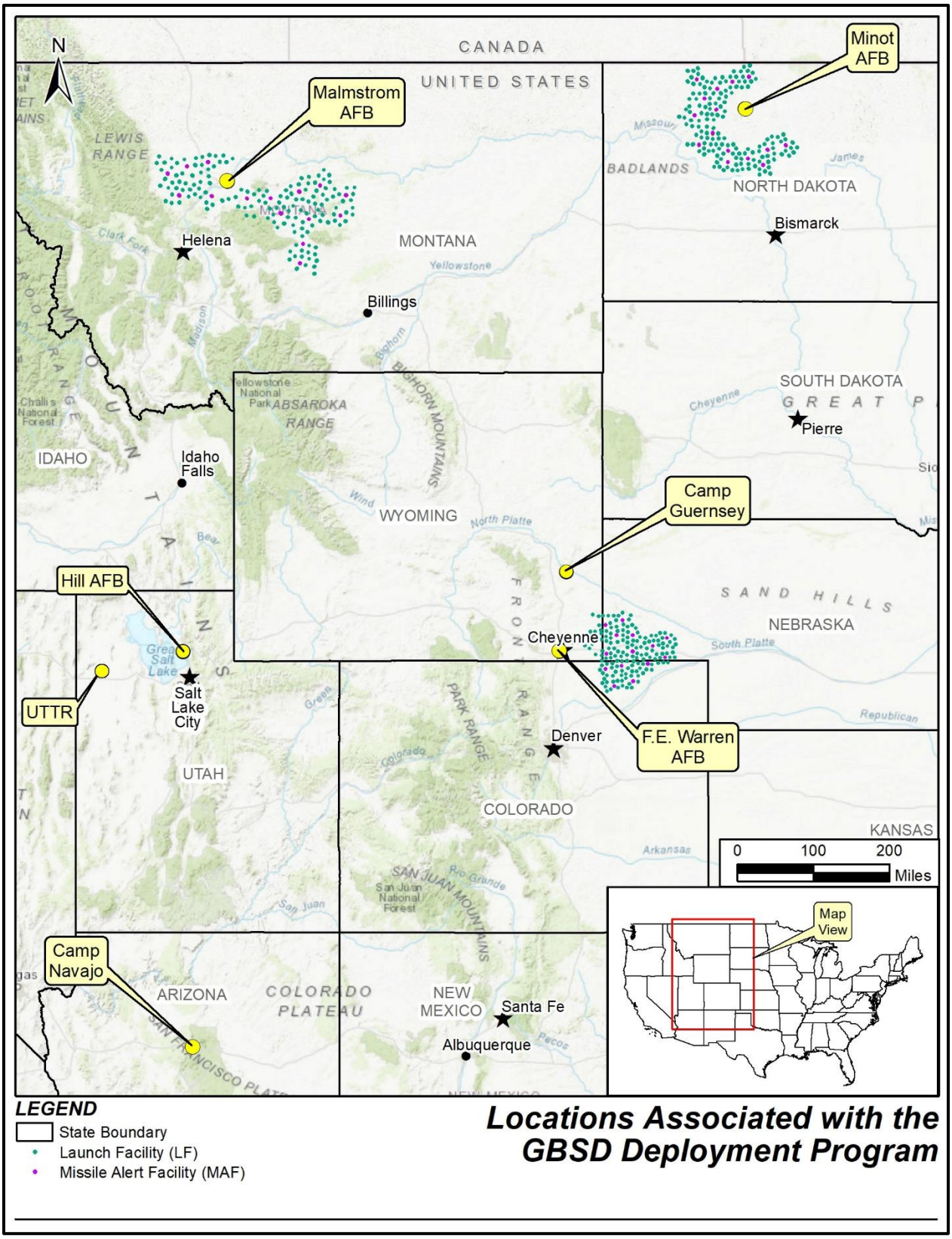
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Kathy Adams-Blackeye, Vice Chair
Lili Ann Pete, Secretary
Warren Graham, Cultural Resources Manager


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Vernon Hill
Eastern Shoshone Tribe
Wind River Reservation
P.O. Box 538, 14 N. Fork Road
Fort Washakie WY 82514

Dear Chairman Hill

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Eastern Shoshone Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Eastern Shoshone Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

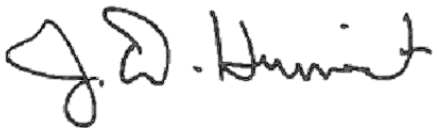
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Eastern Shoshone Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

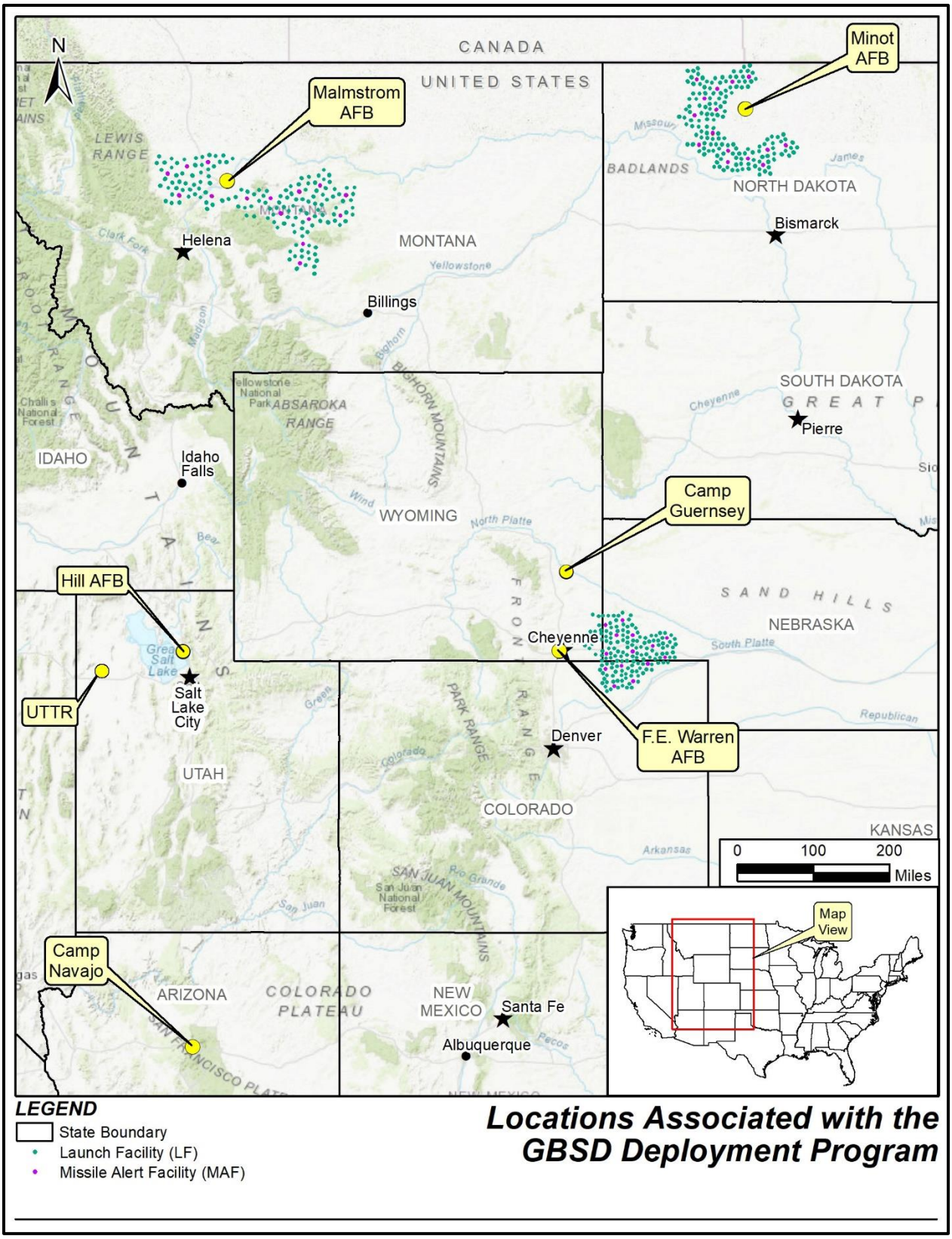
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Joshua Mann, THPO
Wilford Ferris, Director of Cultural Preservation
Phoebe Wilson, Secretary


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairwoman Diane Buckner
Ely Shoshone Tribe of Nevada
Ely Shoshone Indian Reservation
16 Shoshone Circle
Ely NV 89301

Dear Chairwoman Buckner

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Ely Shoshone Tribe of Nevada throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Ely Shoshone Tribe of Nevada enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

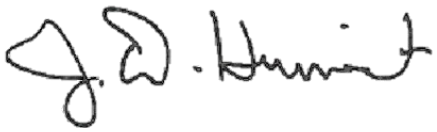
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Ely Shoshone Tribe of Nevada throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

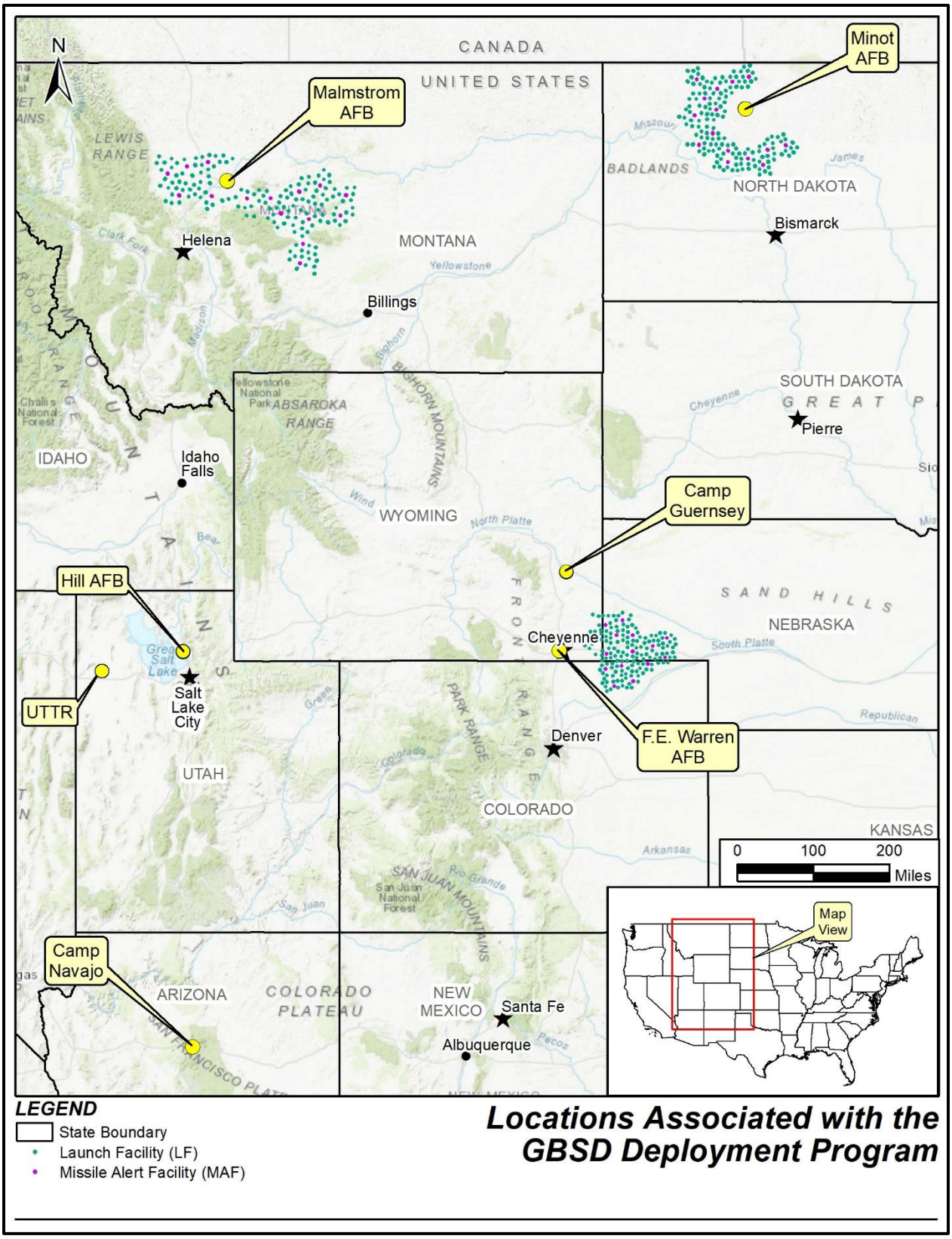
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Cindy Marques, Cultural Resources


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

President Anthony Reider
Flandreau Santee Sioux Tribe
Flandreau Indian Reservation
P.O. Box 283
Flandreau SD 57028

Dear President Reider

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Flandreau Santee Sioux Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Flandreau Santee Sioux Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

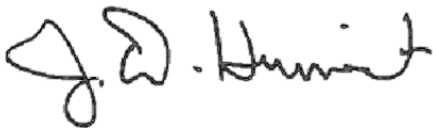
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Flandreau Santee Sioux Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

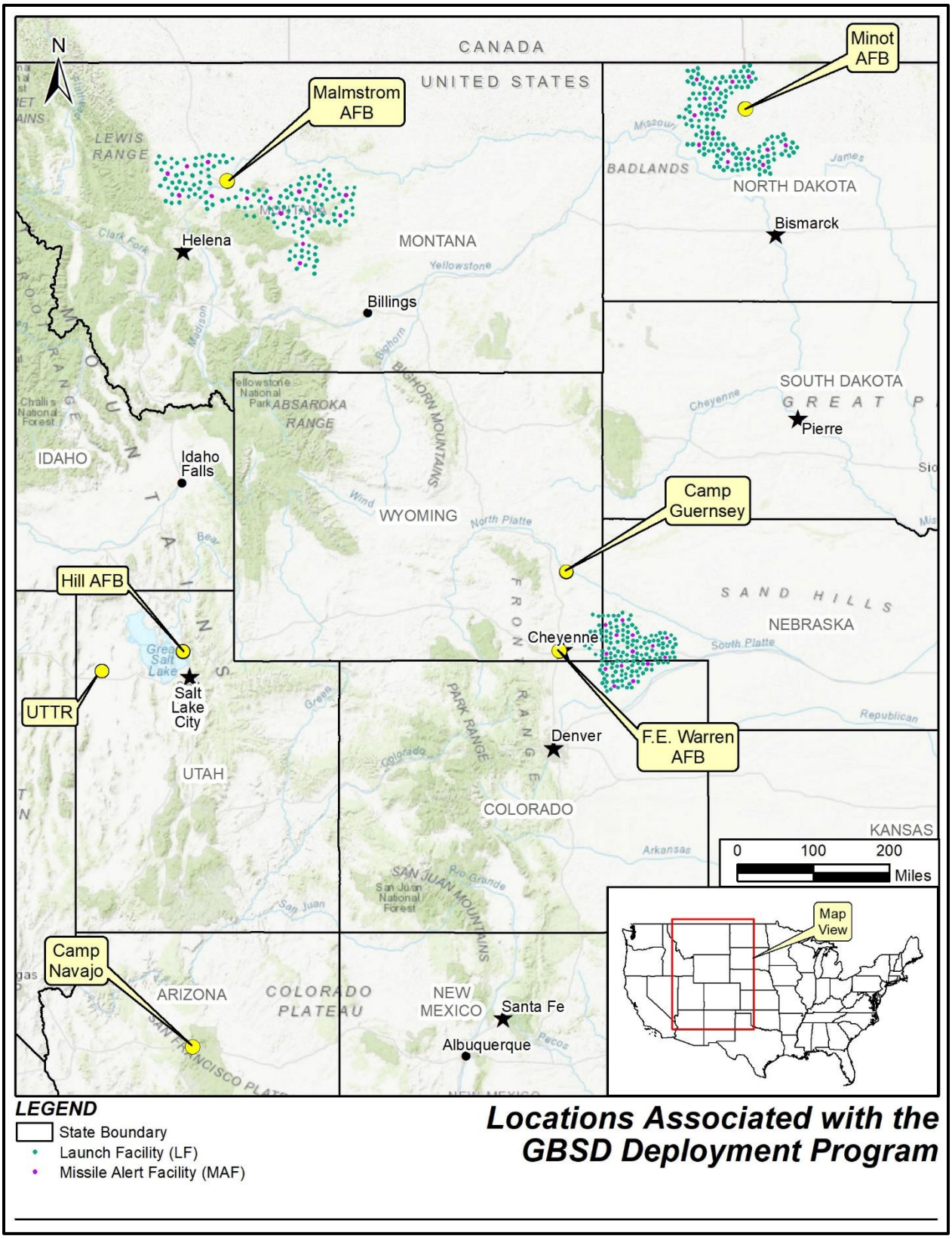
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Garrie Kills A Hundred, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Kevin DuPuis
Fond du Lac Band of Lake Superior Chippewa
Fond du Lac Reservation
1720 Big Lake Road
Cloquet MN 55720

Dear Chairman DuPuis

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Fond du Lac Band of Lake Superior Chippewa throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Fond du Lac Band of Lake Superior Chippewa enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

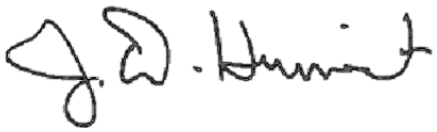
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Fond du Lac Band of Lake Superior Chippewa throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

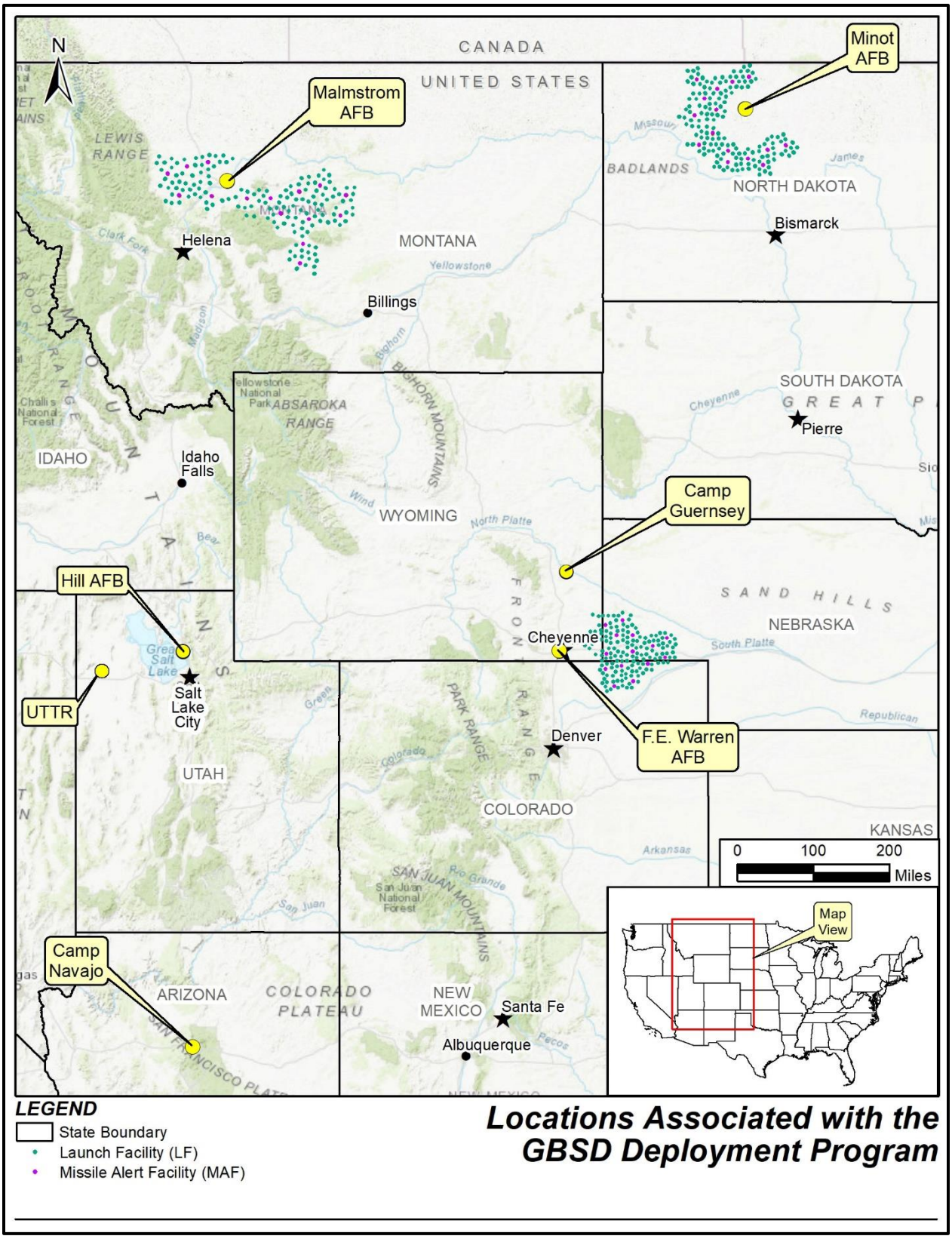
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Jill Hoppe, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

President Andrew "Andy" Werk, Jr.
Fort Belknap Indian Community
Fort Belknap Indian Reservation
656 Agency Main Street
Harlem MT 59526

Dear President Werk

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Fort Belknap Indian Community throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Fort Belknap Indian Community enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

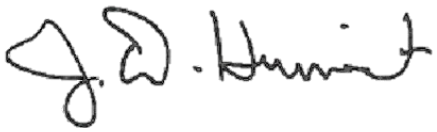
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Fort Belknap Indian Community throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

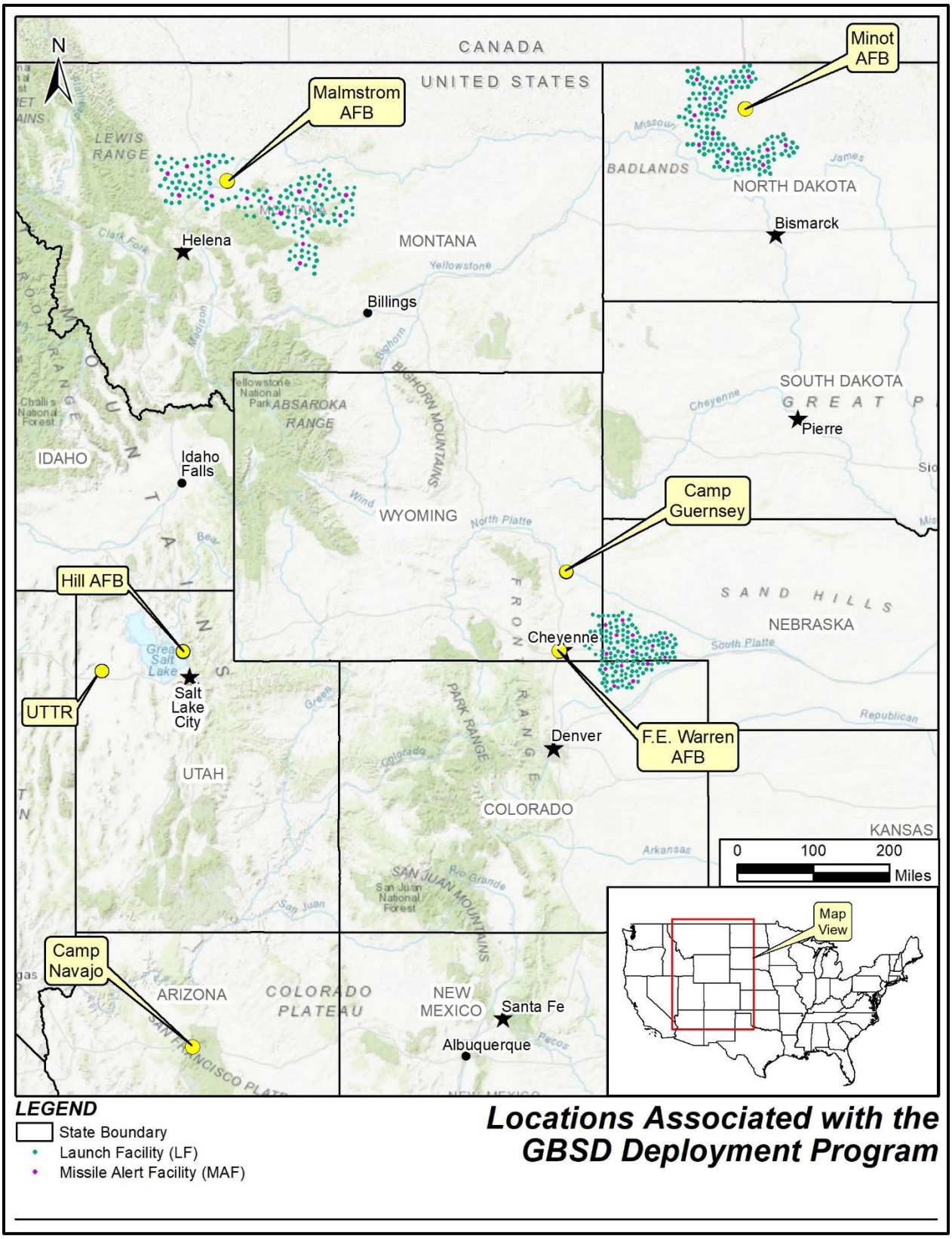
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Michael J. Black Wolf, THPO
Emma Filesteel, Section 106
Kolynn Plumage, THPO Compliance Officer


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Jeff Haozous
Fort Sill Apache Tribe
43187 U.S. Highway 281
Apache OK 73006

Dear Chairman Haozous

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Fort Sill Apache Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Fort Sill Apache Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Fort Sill Apache Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

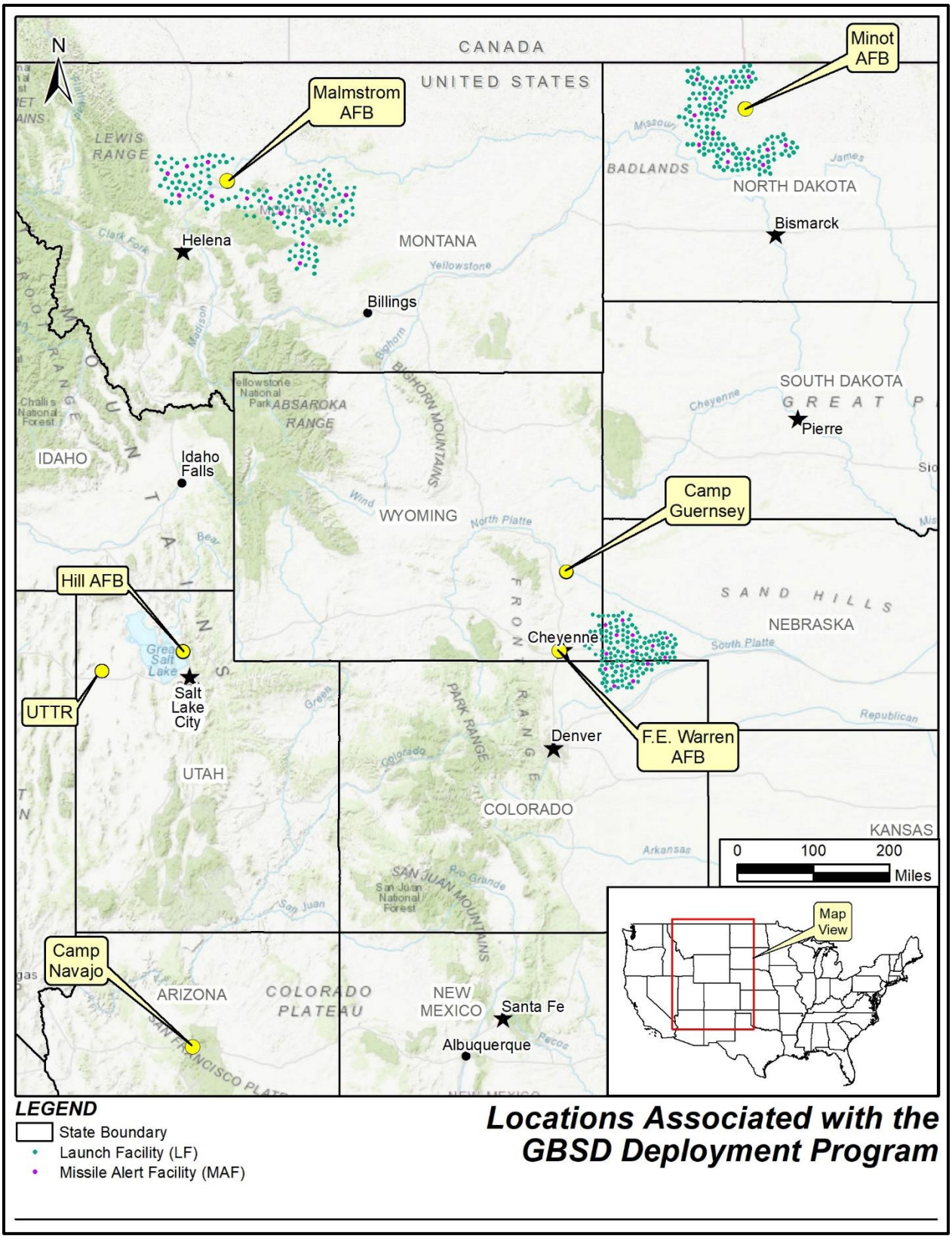
Thank you in advance for your assistance in this effort.

Sincerely

JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Leland Darrow, Tribal Historian


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairperson Beth Drost
Grand Portage Band of Lake Superior Chippewa
Grand Portage Indian Reservation
P.O. Box 428
Grand Portage MN 55605

Dear Chairperson Drost

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Grand Portage Band of Lake Superior Chippewa throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Grand Portage Band of Lake Superior Chippewa enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

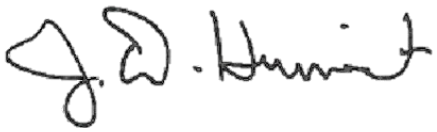
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Grand Portage Band of Lake Superior Chippewa throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

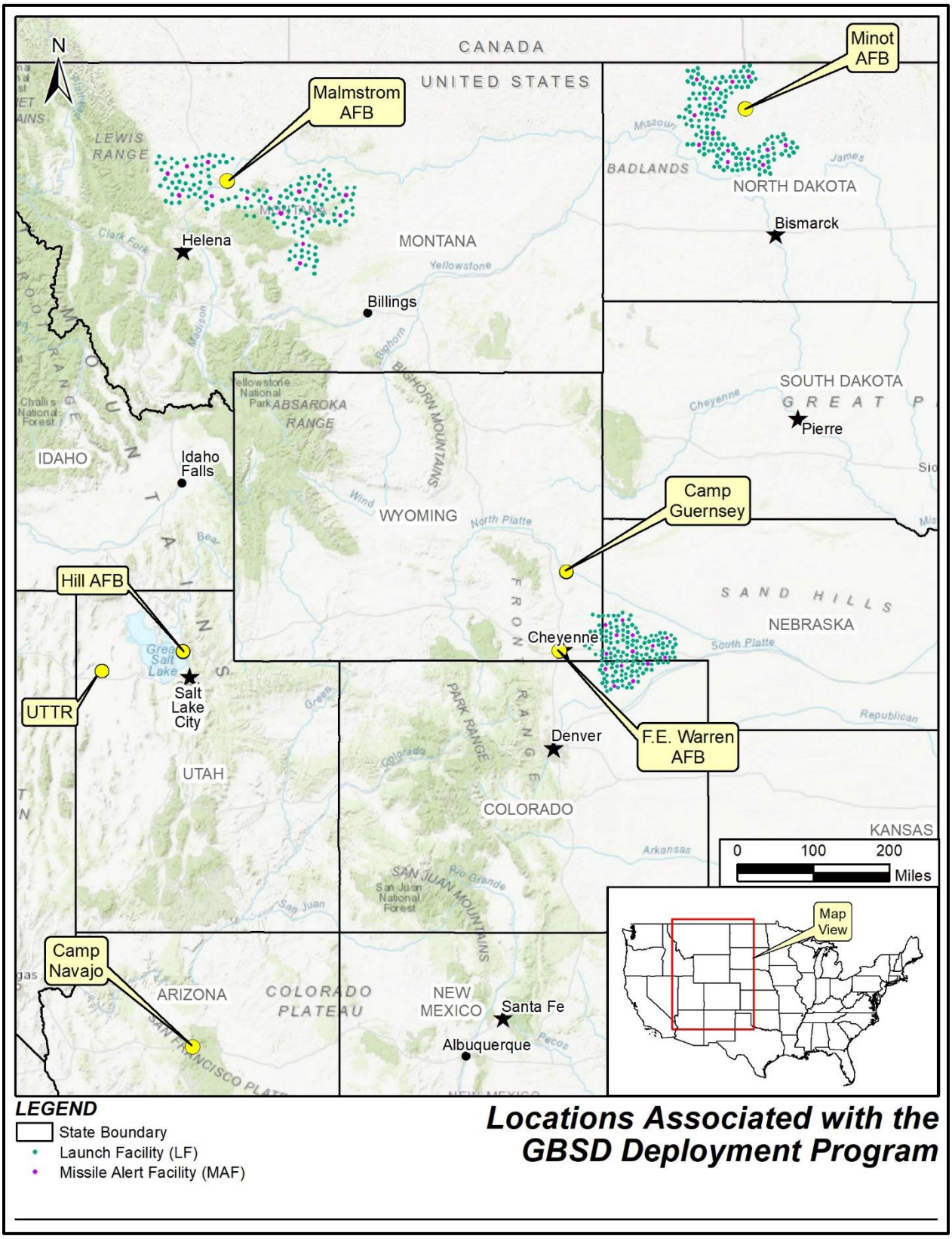
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Mary Ann Gagnon, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chair Timothy Nuvangyaoma
Hopi Tribe
Hopi Indian Reservation
P.O. Box 123
Kykotsmovi AZ 86039

Dear Chair Nuvangyaoma

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Hopi Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Hopi Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

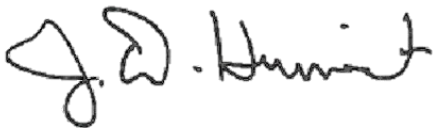
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Hopi Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

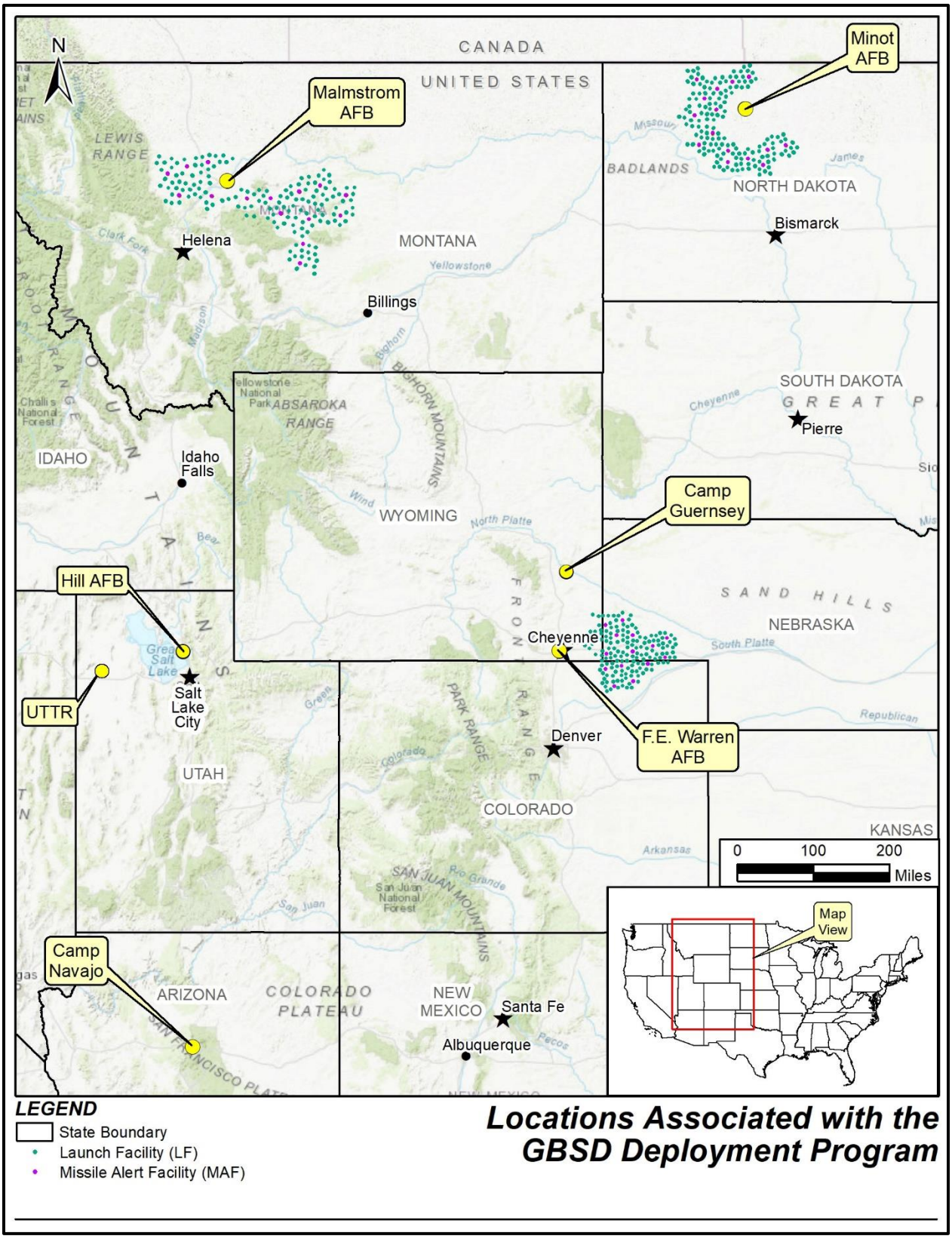
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Theresa Lomakema, Administrative Secretary
Stewart Koyiyumptewa, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

President Darrell Paiz
Jicarilla Apache Tribe
Jicarilla Apache Indian Reservation
P.O. Box 507, Bldg. No. 25 Hawks Drive
Dulce NM 87528

Dear President Paiz

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Jicarilla Apache Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Jicarilla Apache Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

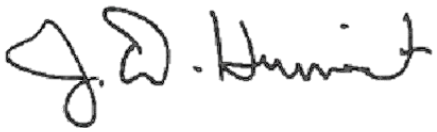
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Jicarilla Apache Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

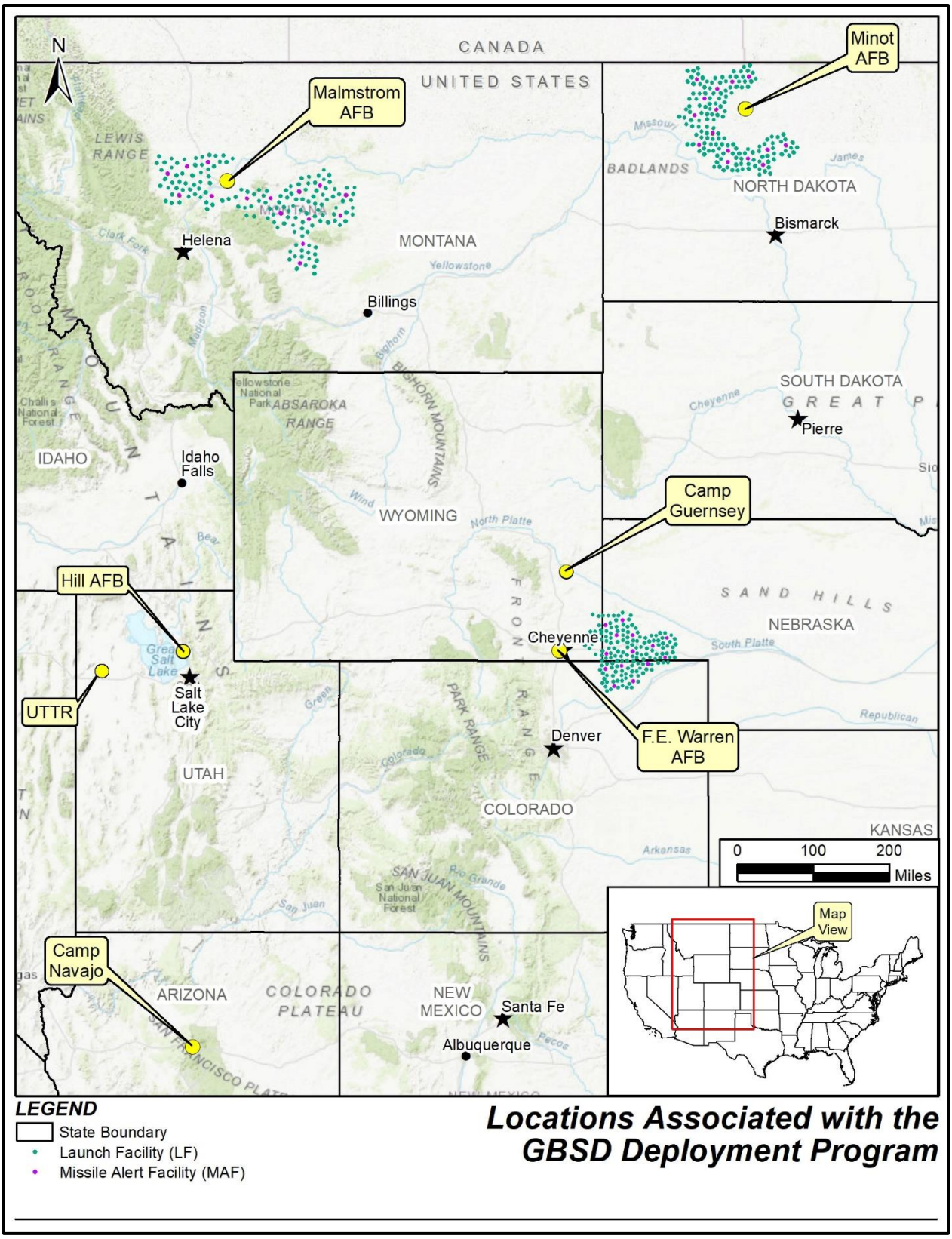
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Jeffrey Blythe, THPO, Office of Cultural Affairs


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

Electronic Delivery Confirmation™

Kathy Roxlau, Tetra Tech
3201 AIRPARK DR STE 108
SANTA MARIA CA 93455-1834

USPS CERTIFIED MAIL

9407 1108 9876 5060 2068 58

Jicarilla Apache Tribe
Jeffrey Blythe
PO BOX 1367
DULCE NM 87528-1367

US POSTAGE AND FEES PAID
FIRST-CLASS
May 26 2020
Mailed from ZIP 93455
2 oz First-Class Mail Flats Rate

071S00777793

Reference	
USPS #	9407110898765060206858
USPS Mail Class	Certified with Electronic Delivery Confirmation
USPS Status	Your item was delivered at 2:41 pm on June 4, 2020 in DULCE, NM 87528.
USPS History	Reminder to Schedule Redelivery of your item Available for Pickup, 05/29/2020, 10:55 am, DULCE, NM 87528 Arrived at Unit, May 29, 2020, 10:54 am, DULCE, NM 87528 Departed USPS Facility, May 28, 2020, 9:18 pm, ALBUQUERQUE, NM 87101 Arrived at USPS Destination Facility, 05/28/2020, 2:58 pm, ALBUQUERQUE, NM 87101 In Transit to Next Facility, 05/28/2020 In Transit to Next Facility, 05/27/2020 Arrived at USPS Regional Origin Facility, 05/26/2020, 10:33 pm, SANTA BARBARA CA DISTRIBUTION CENTER Accepted at USPS Origin Facility, May 26, 2020, 9:18 pm, SANTA MARIA, CA 93455 Shipment Received, Package Acceptance Pending, May 26, 2020, 5:19 pm, SANTA MARIA, CA 93454 Shipping Label Created, USPS Awaiting Item, May 26, 2020, 1:48 pm, SANTA MARIA, CA 93455

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Matthew Komalty
Kiowa Tribe of Oklahoma
P.O. Box 369
Carnegie OK 73015

Dear Chairman Komalty

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Kiowa Tribe of Oklahoma throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Kiowa Tribe of Oklahoma enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

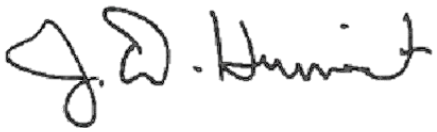
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Kiowa Tribe of Oklahoma throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

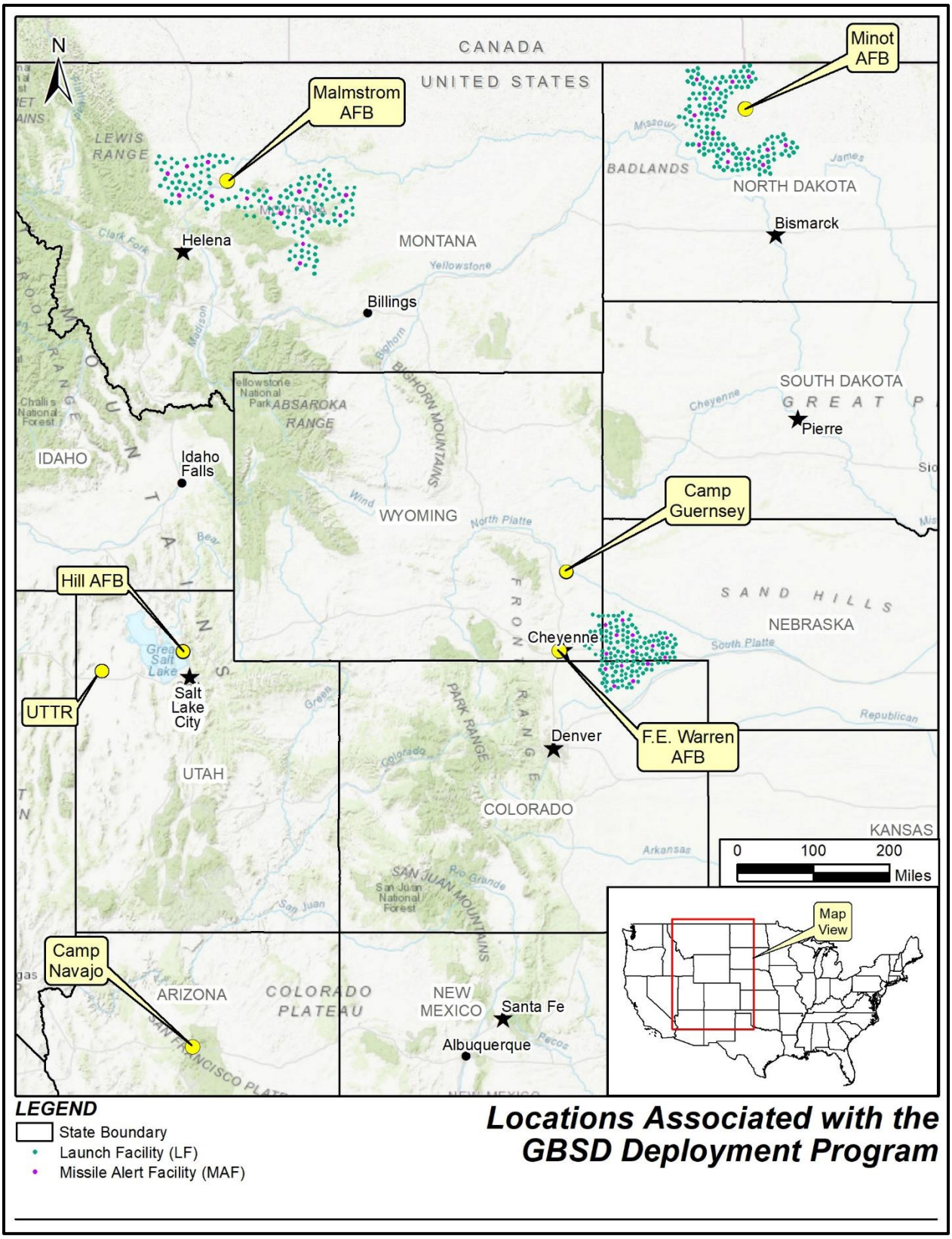
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Kellie J. Lewis, Acting THPO/NAGPRA Contact
Ivy Smith, Assistant Acting THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Faron Jackson, Sr.
Leech Lake Band of Ojibwe
Leech Lake Reservation
190 Sailstar Drive NW
Cass Lake MN 56633

Dear Chairman Jackson

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Leech Lake Band of Ojibwe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Leech Lake Band of Ojibwe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

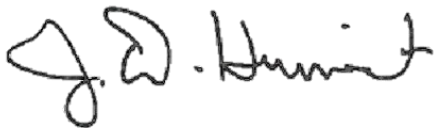
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Leech Lake Band of Ojibwe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

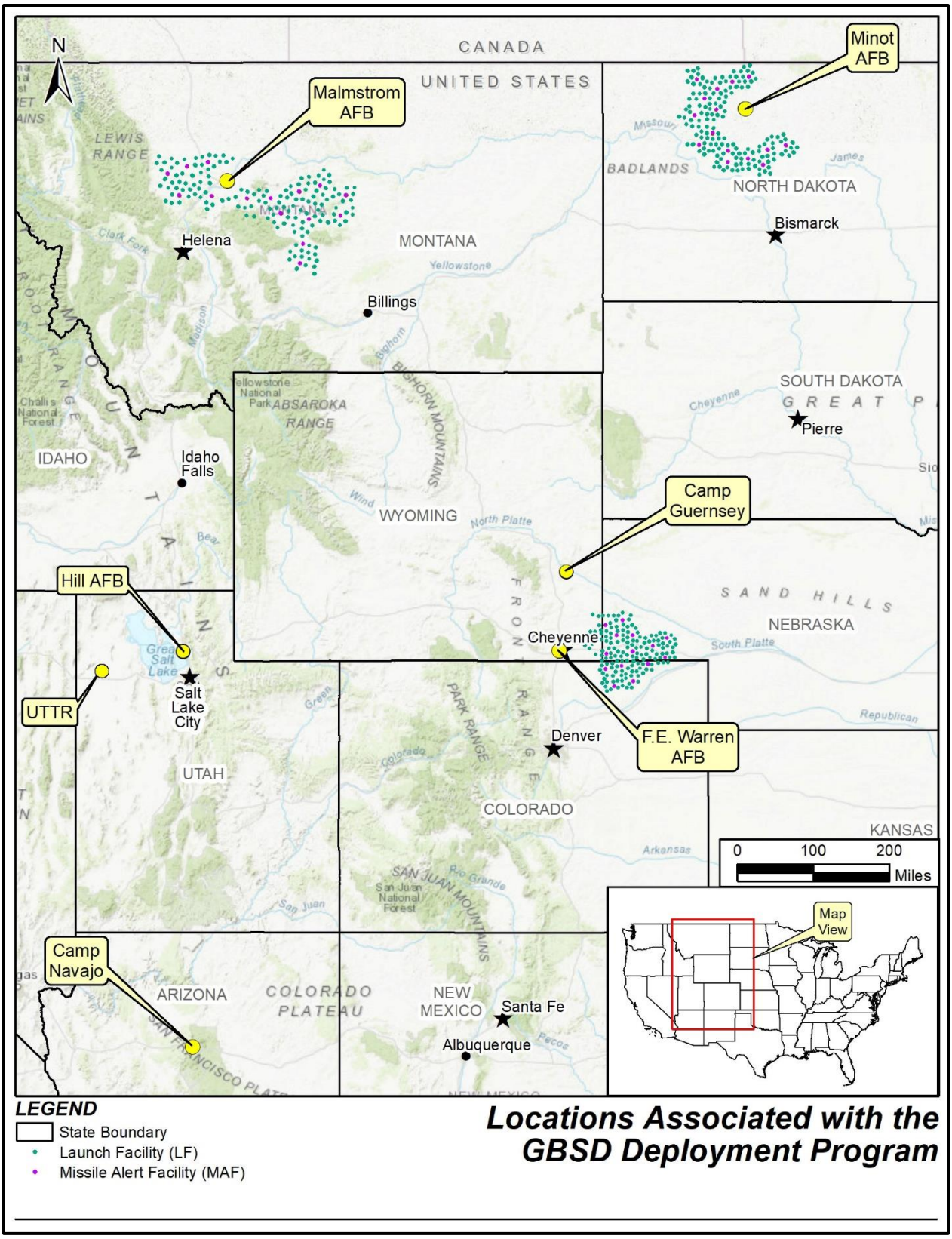
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Amy Burnette, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Gerald Gray
Little Shell Tribe of Chippewa Indians
615 Central Avenue West
Great Falls MT 59404

Dear Chairman Gray

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Little Shell Tribe of Chippewa Indians throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Little Shell Tribe of Chippewa Indians enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

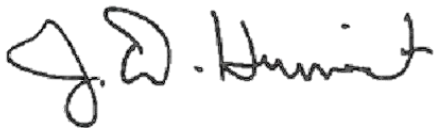
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Little Shell Tribe of Chippewa Indians throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

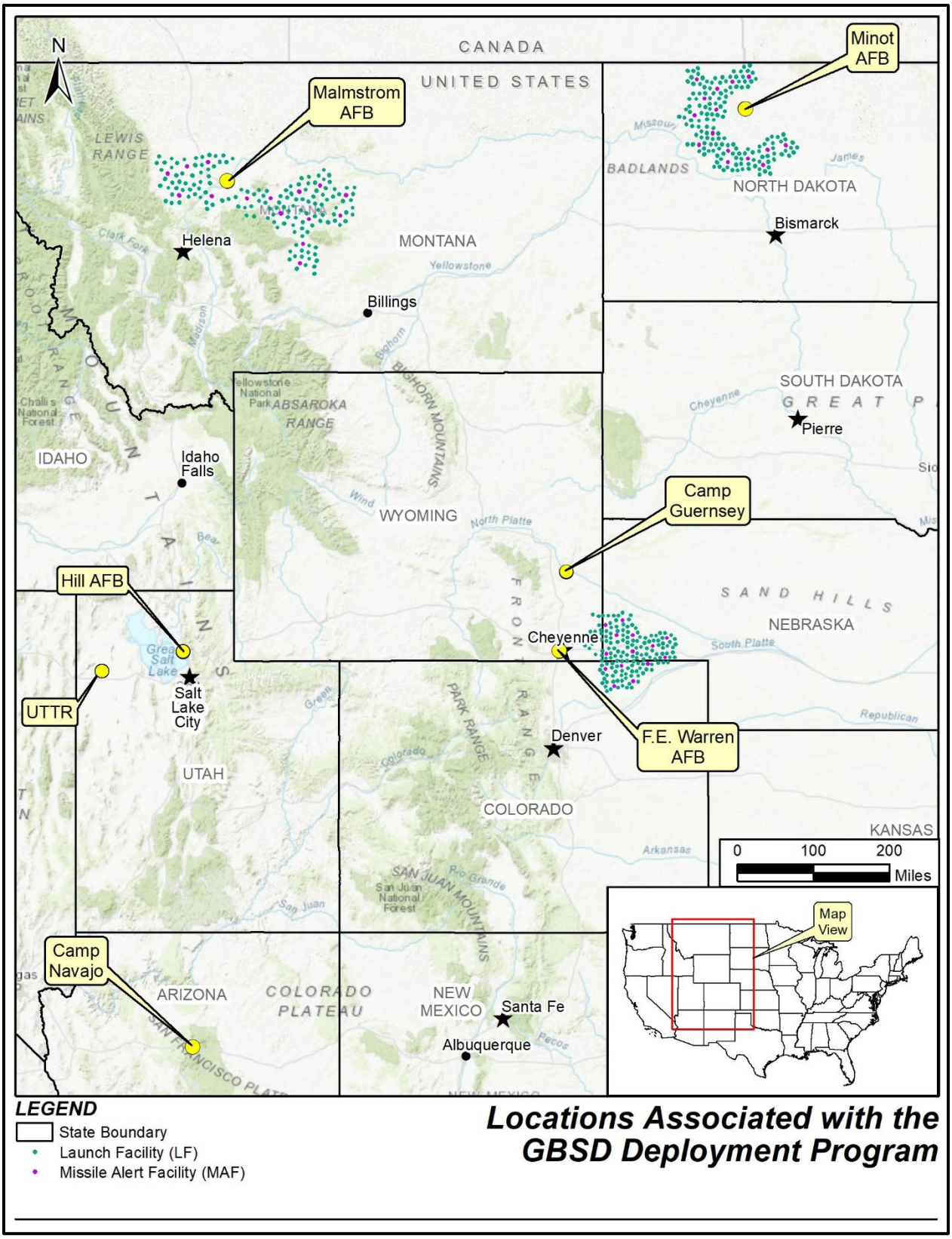
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Clarence Sivertsen, 1st Vice Chairman
Duane Reid, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Boyd Gourneau
Lower Brule Sioux Tribe
Lower Brule Indian Reservation
P.O. Box 187
Lower Brule SD 57548

Dear Chairman Gourneau

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Lower Brule Sioux Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Lower Brule Sioux Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

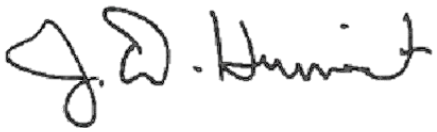
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Lower Brule Sioux Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

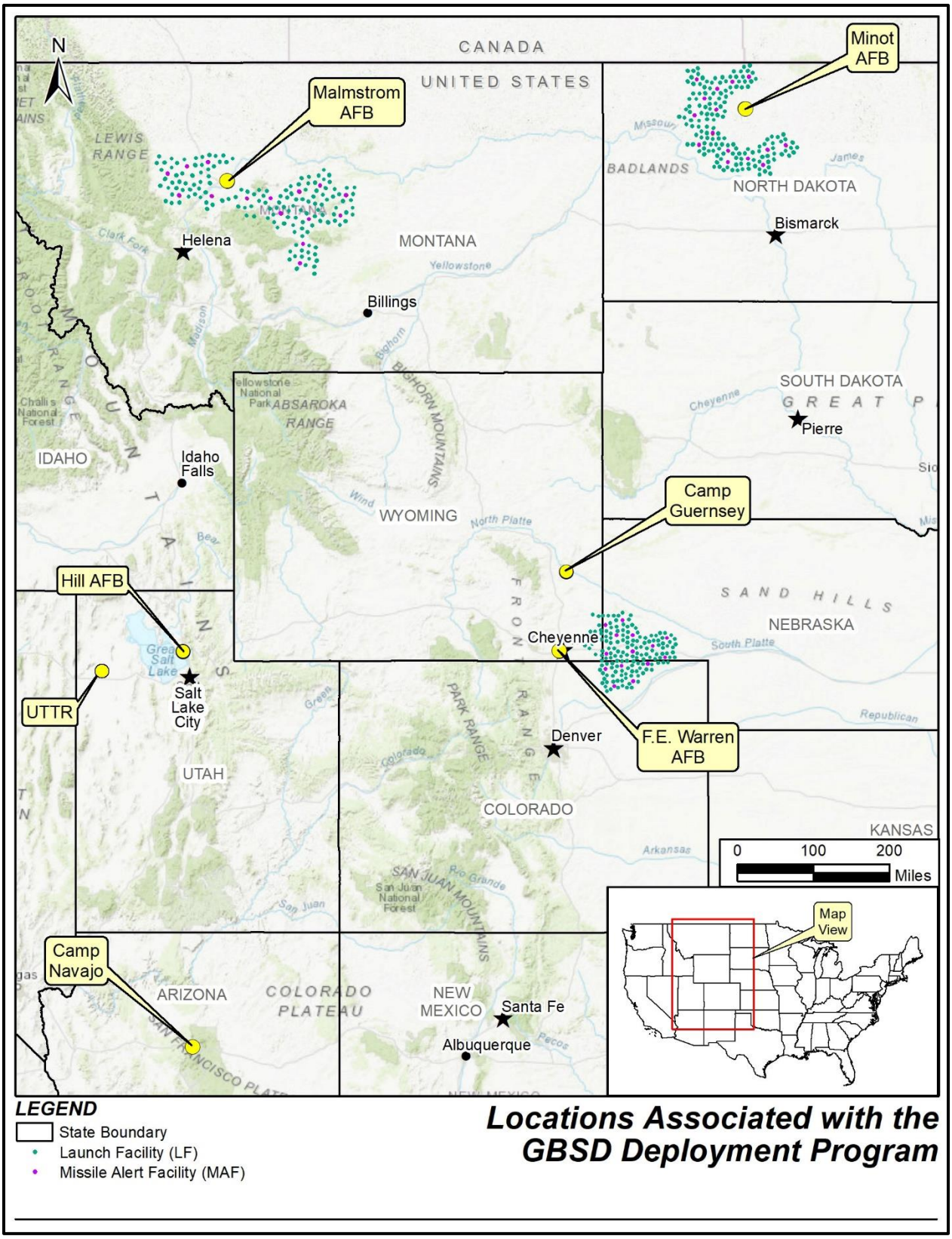
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Clair Green, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

President Robert Larsen
Lower Sioux Indian Community
Lower Sioux Indian Reservation
P.O. Box 308
Morton MN 56270

Dear President Larsen

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Lower Sioux Indian Community throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Lower Sioux Indian Community enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

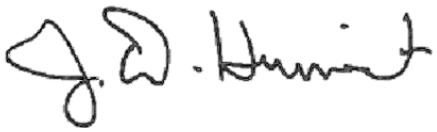
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Lower Sioux Indian Community throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

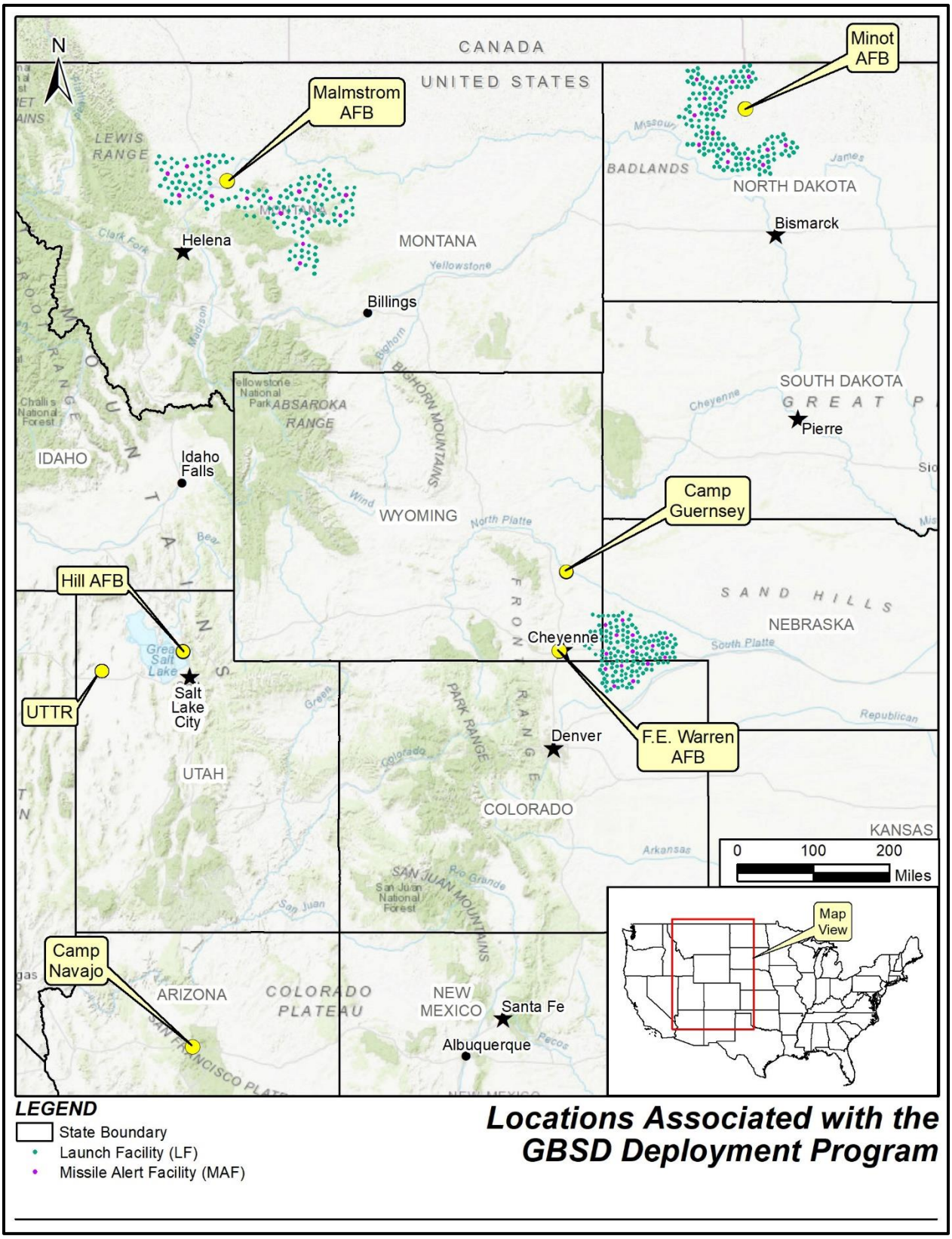
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Cheyanne St. John, THPO, Cansayapi Cultural Dept. Director


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

President Arthur "Butch" Blazer
Mescalero Apache Tribe
Mescalero Indian Reservation
P.O. Box 227
Mescalero NM 88340

Dear President Blazer

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Mescalero Apache Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Mescalero Apache Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Mescalero Apache Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

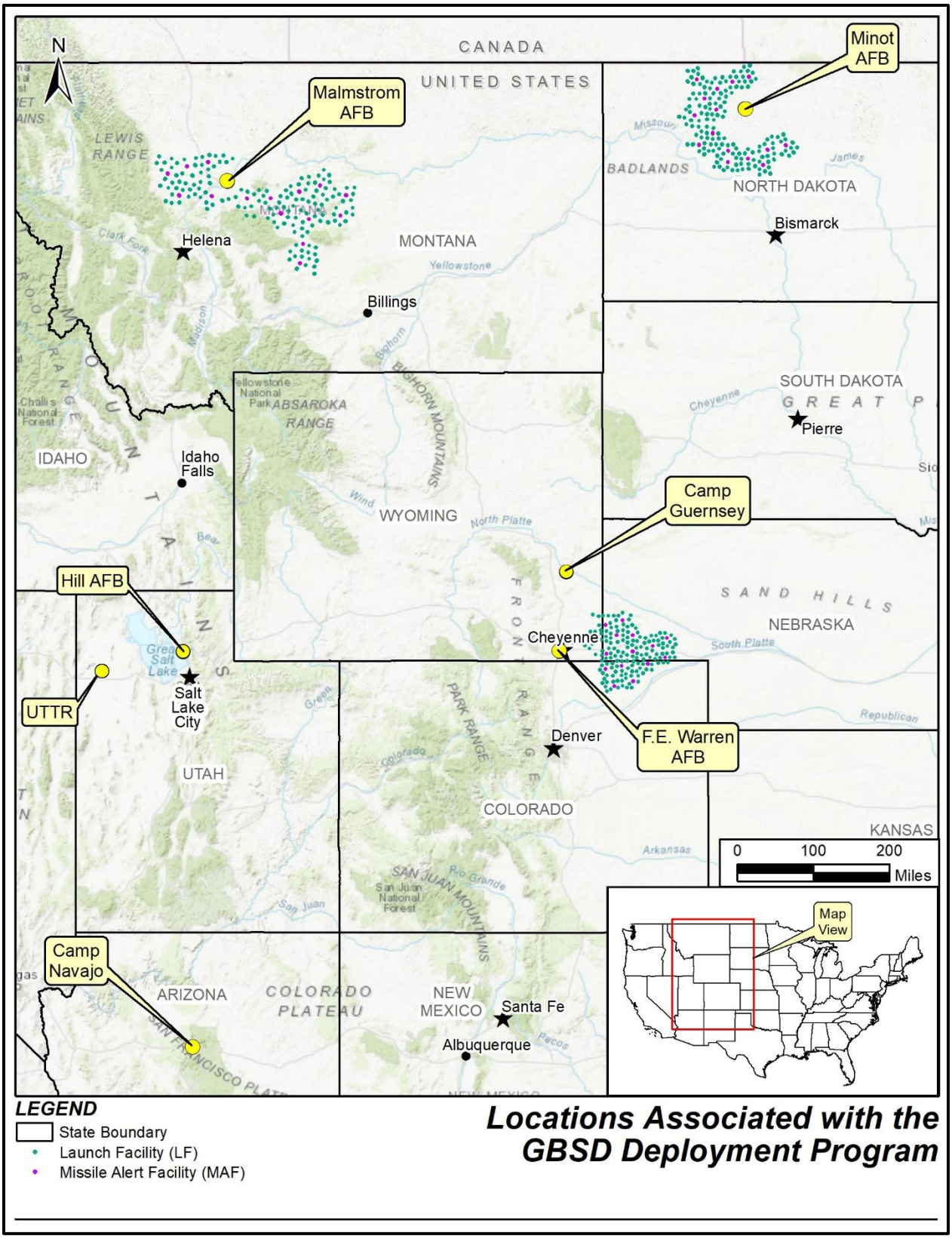
Thank you in advance for your assistance in this effort.

Sincerely

JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Holly Houghten, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chief Executive Melanie Benjamin
Mille Lacs Band of Ojibwe
Mille Lacs Reservation
43408 Oodena Drive
Onamia MN 56359

Dear Chief Executive Benjamin

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Mille Lacs Band of Ojibwe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Mille Lacs Band of Ojibwe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

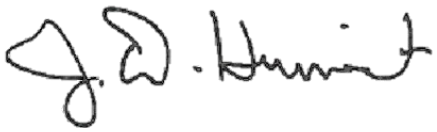
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Mille Lacs Band of Ojibwe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

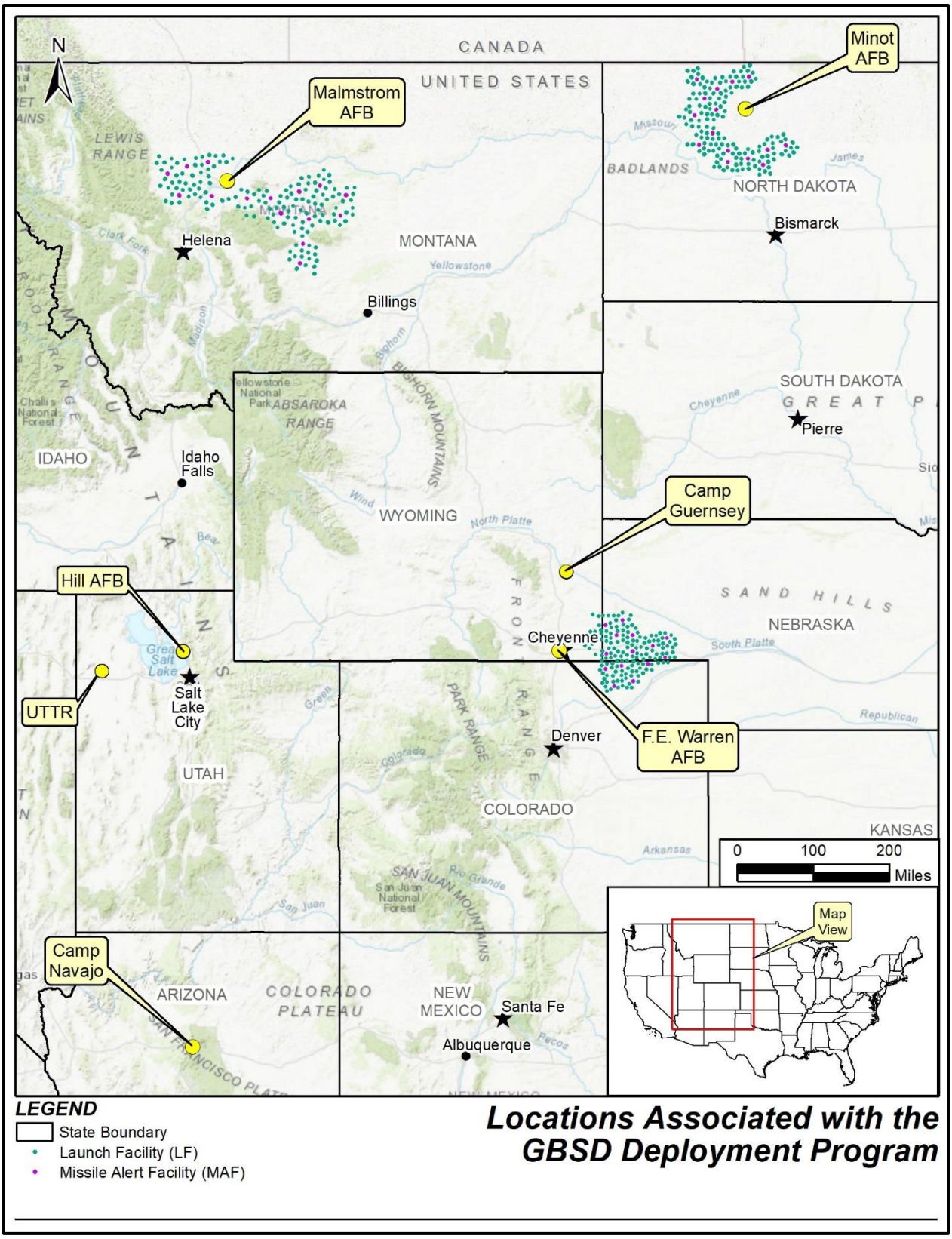
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Natalie Weyaus, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

President Jonathan Nez
Navajo Nation
Navajo Indian Reservation
P.O. Box 7440, 100 Parkway
Window Rock AZ 86515

Dear President Nez

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Navajo Nation throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Navajo Nation enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

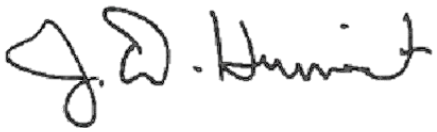
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Navajo Nation throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

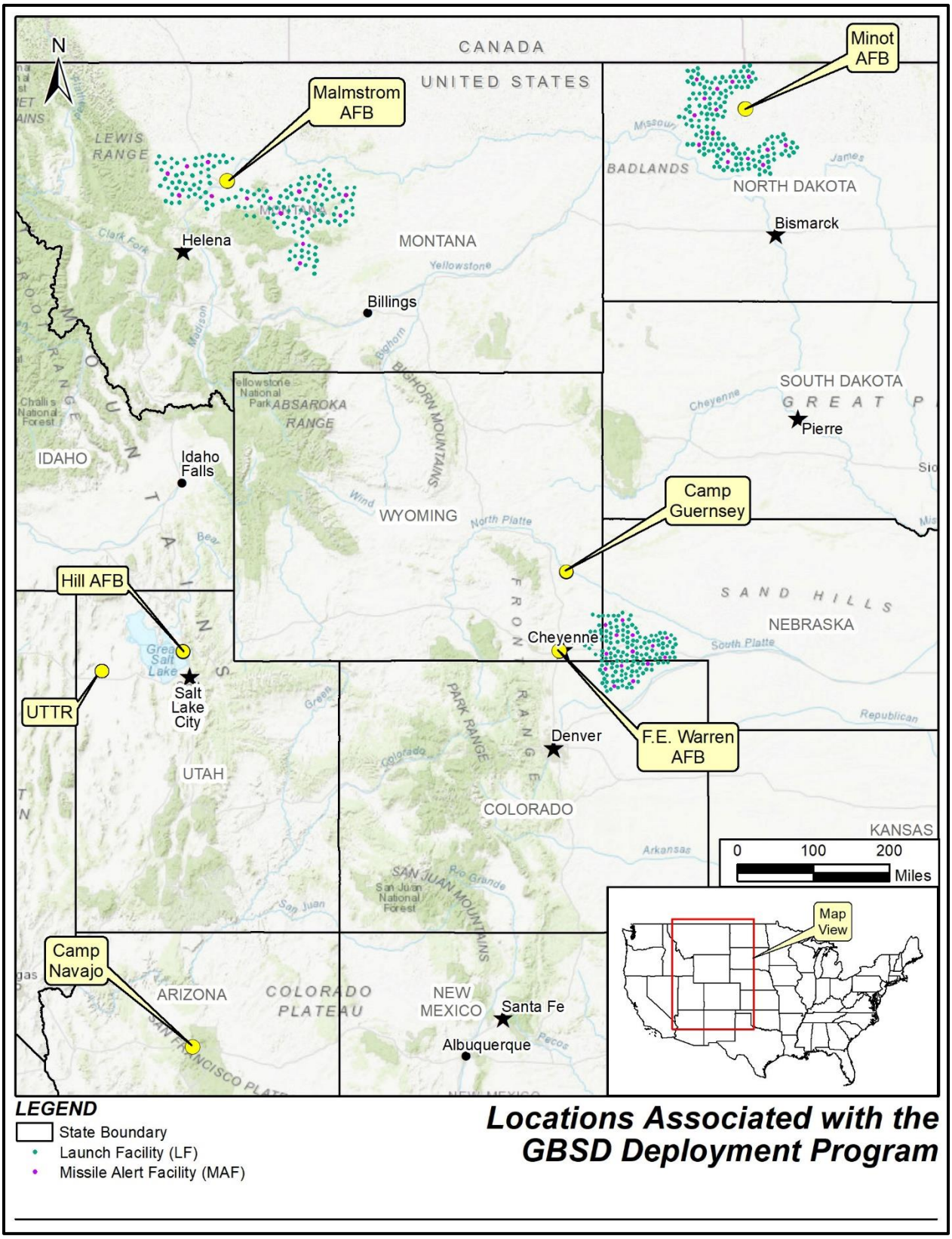
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Richard Begay, THPO, Historic Preservation Department
Tamara Billie, Senior Archaeologist, Historic Preservation Department


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Lee Spoonhunter
Northern Arapaho Tribe
Wind River Reservation
P.O. Box 396
Fort Washakie WY 82514

Dear Chairman Spoonhunter

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Northern Arapaho Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Northern Arapaho Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

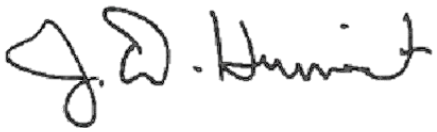
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Northern Arapaho Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

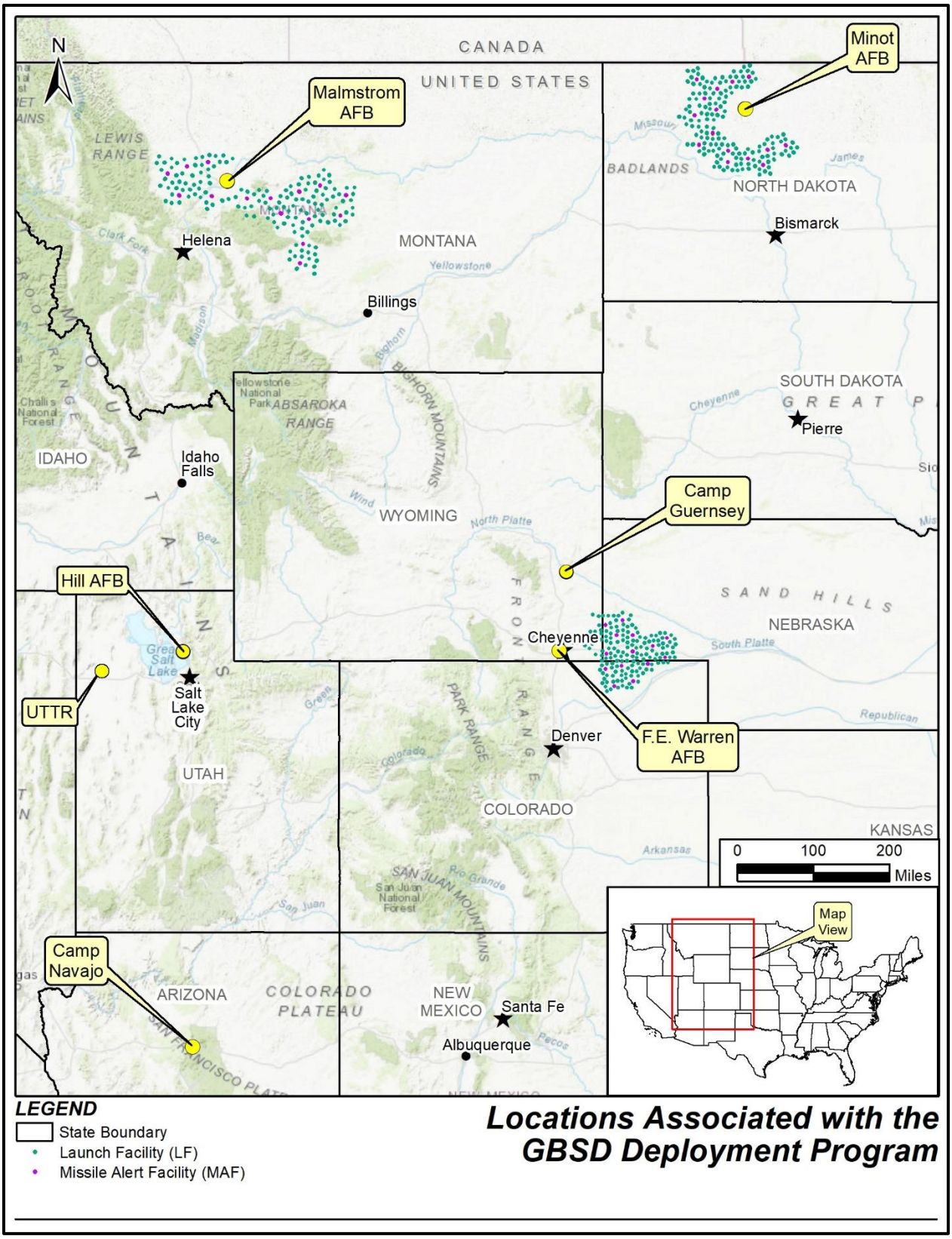
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Devin Oldman, THPO Director
Crystal C'Bearing, THPO Deputy Director


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

President Rynalea Whiteman Pena
Northern Cheyenne Tribe
Northern Cheyenne Indian Reservation
P.O. Box 128, 600 Cheyenne Avenue
Lame Deer MT 59043

Dear President Whiteman Pena

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Northern Cheyenne Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Northern Cheyenne Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

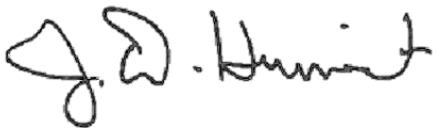
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Northern Cheyenne Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

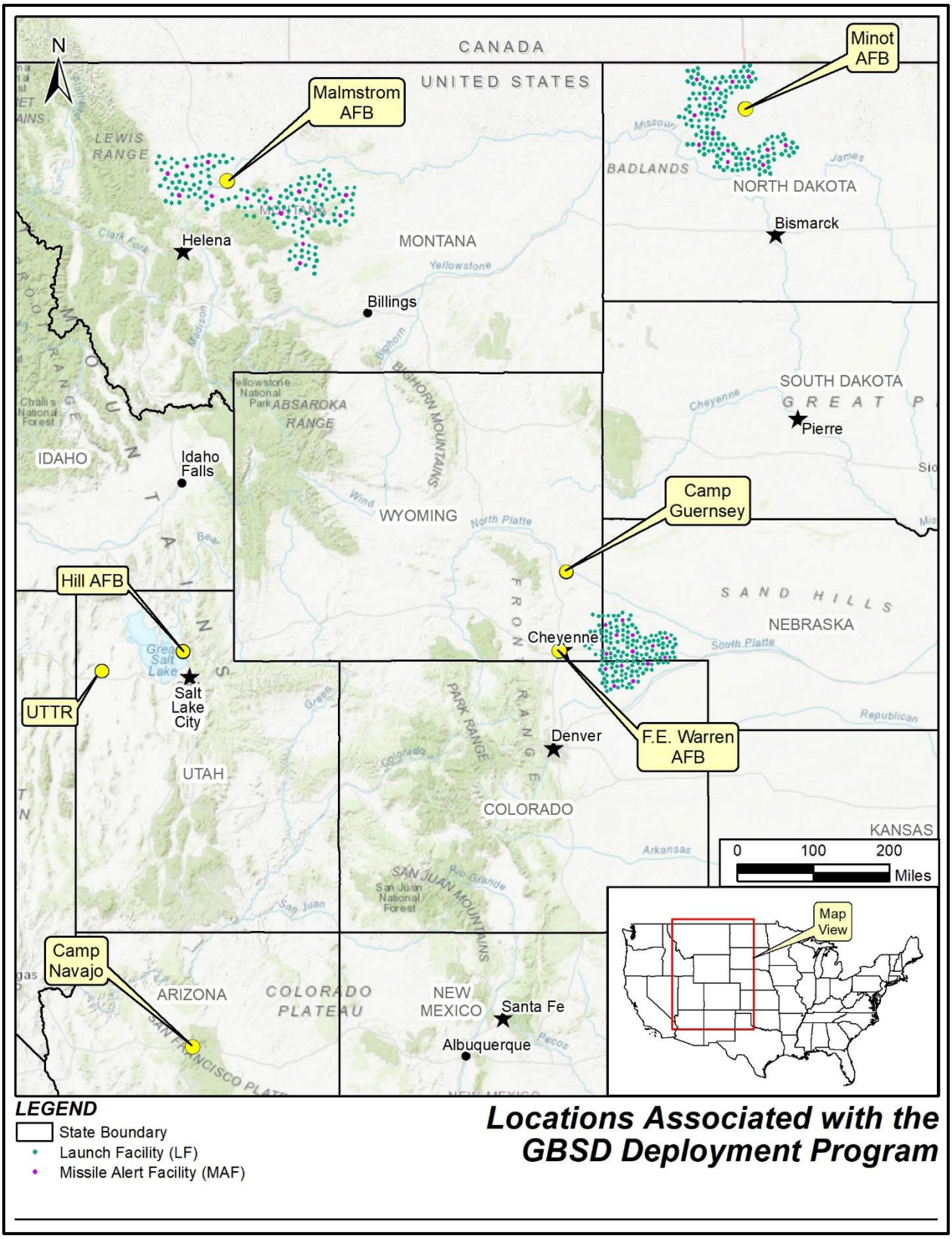
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Maxine Limberhand, Executive Assistant to President
Teanna Limpy, THPO Director


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Darren Parry
Northwestern Band of the Shoshone Nation
707 North Main Street
Brigham City UT 84302

Dear Chairman Parry

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Northwestern Band of the Shoshone Nation throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Northwestern Band of the Shoshone Nation enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

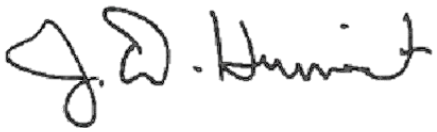
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Northwestern Band of the Shoshone Nation throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

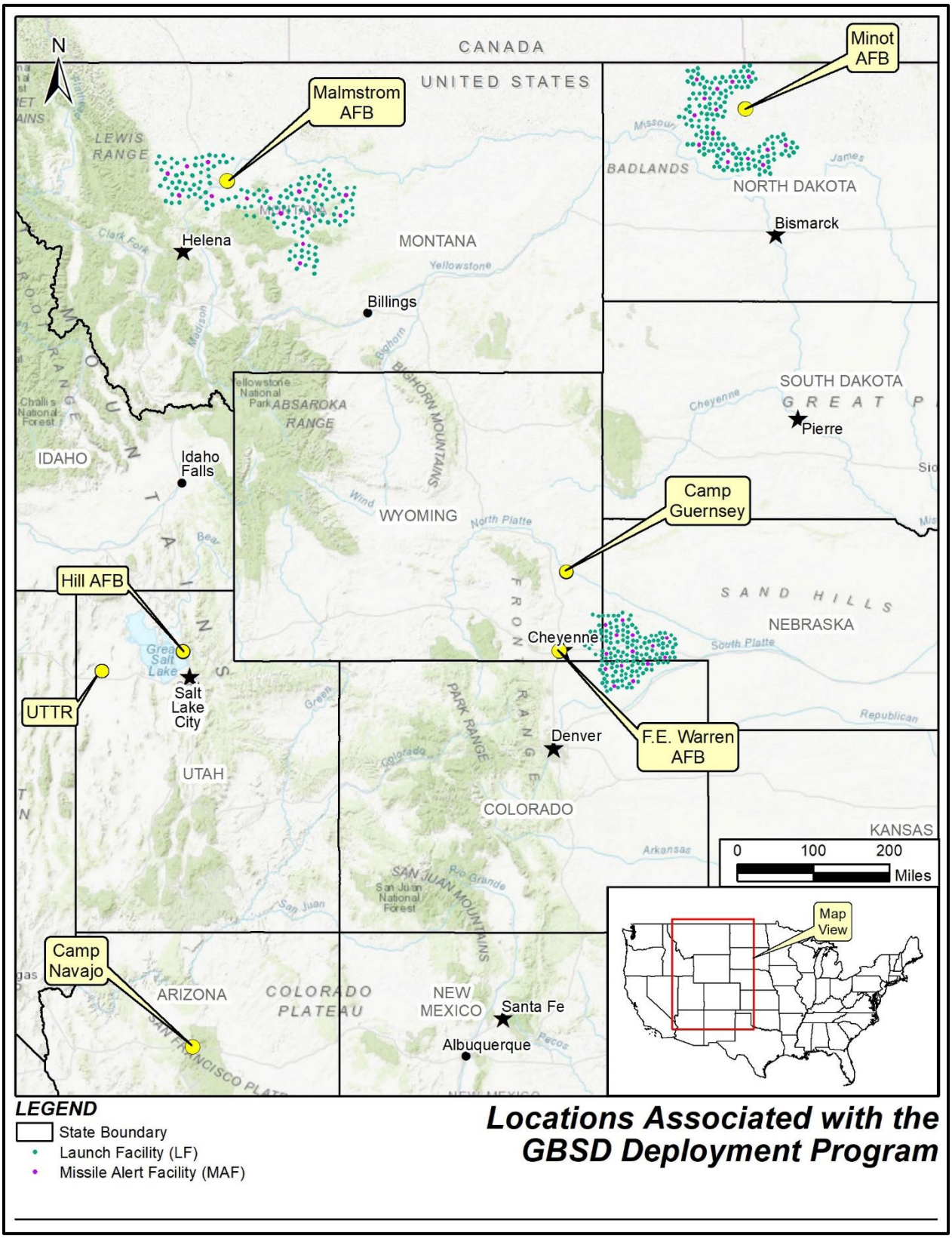
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Michael Gross, Secretary
George Grover, Director
Patty Timbimboo-Madsen, Cultural Resources Director


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

President Julian Bear Runner
Oglala Sioux Tribe
Pine Ridge Indian Reservation
P.O. Box 2070, 107 West Main Street
Pine Ridge SD 57770

Dear President Bear Runner

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Oglala Sioux Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Oglala Sioux Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

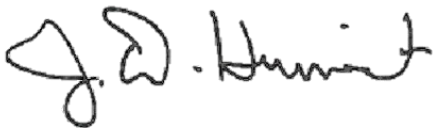
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Oglala Sioux Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

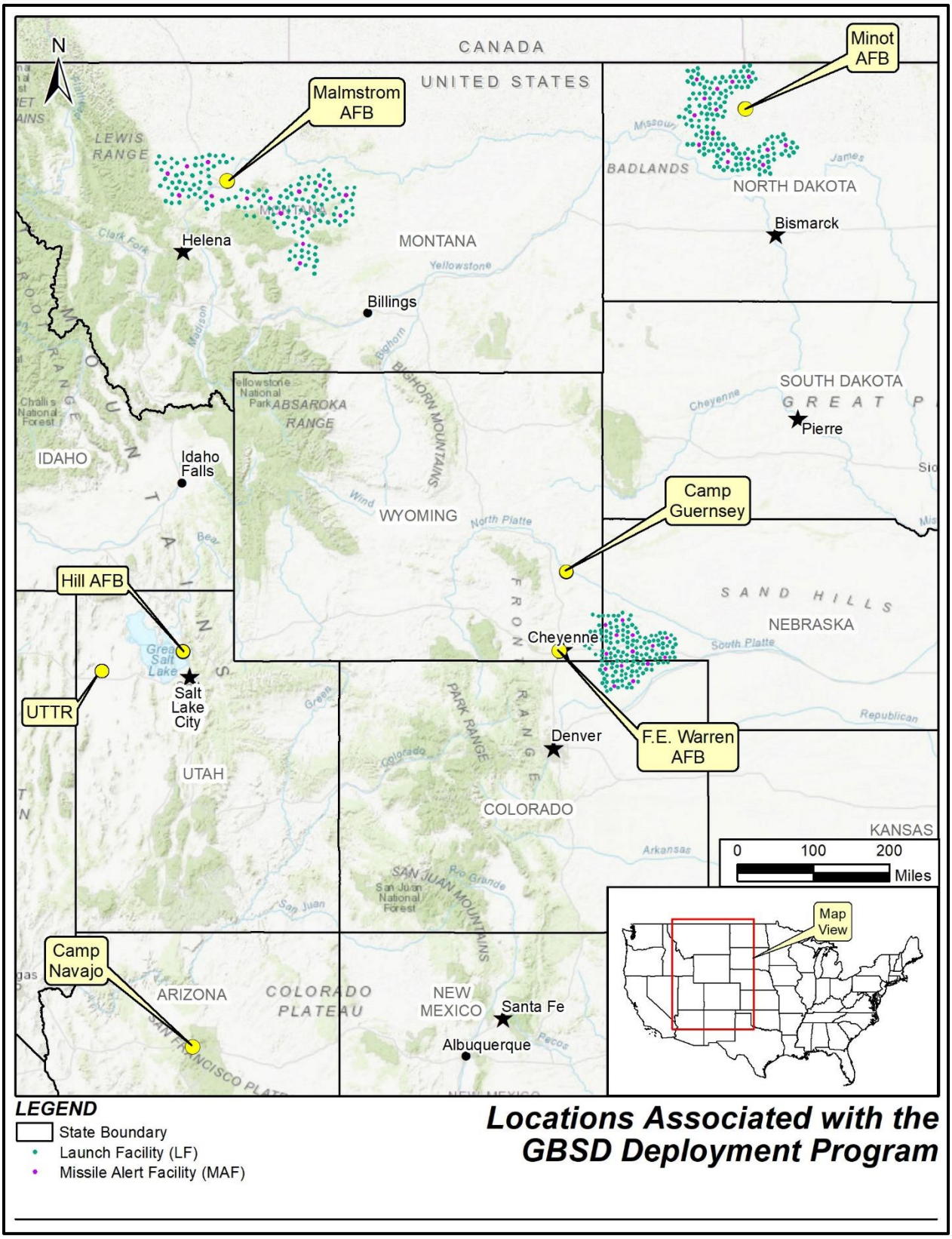
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Thomas Brings, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Tribal Chairperson Tamara Borchardt-Slayton
Paiute Indian Tribe of Utah
PITU Tribal Reservation
440 North Paiute Drive
Cedar City UT 84721

Dear Tribal Chairperson Borchardt-Slayton

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Paiute Indian Tribe of Utah throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Paiute Indian Tribe of Utah enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

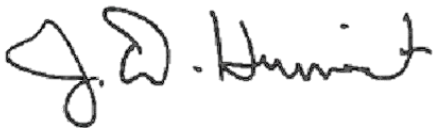
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Paiute Indian Tribe of Utah throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

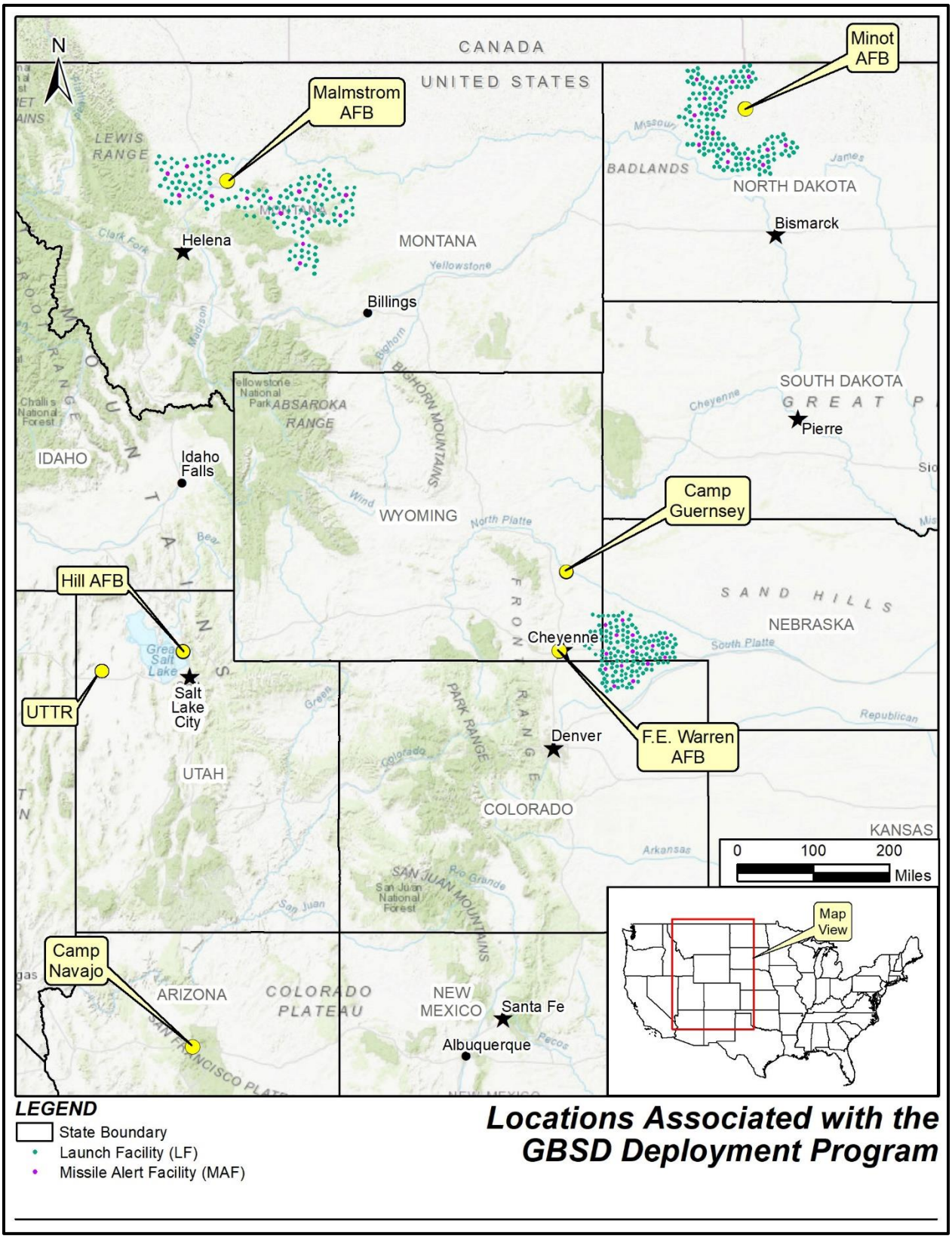
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Shane Parashonts, Tribal Administrator
Carol Garcia, Administrative Assistant
Dorena Martineau, Cultural Resources Director


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

President James Whiteshirt
Pawnee Nation of Oklahoma
P.O. Box 470, 881 Little Dee Drive
Pawnee OK 74058

Dear President Whiteshirt

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Pawnee Nation of Oklahoma throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Pawnee Nation of Oklahoma enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

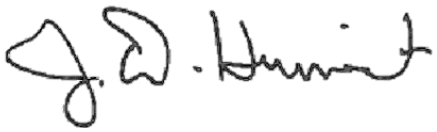
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Pawnee Nation of Oklahoma throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

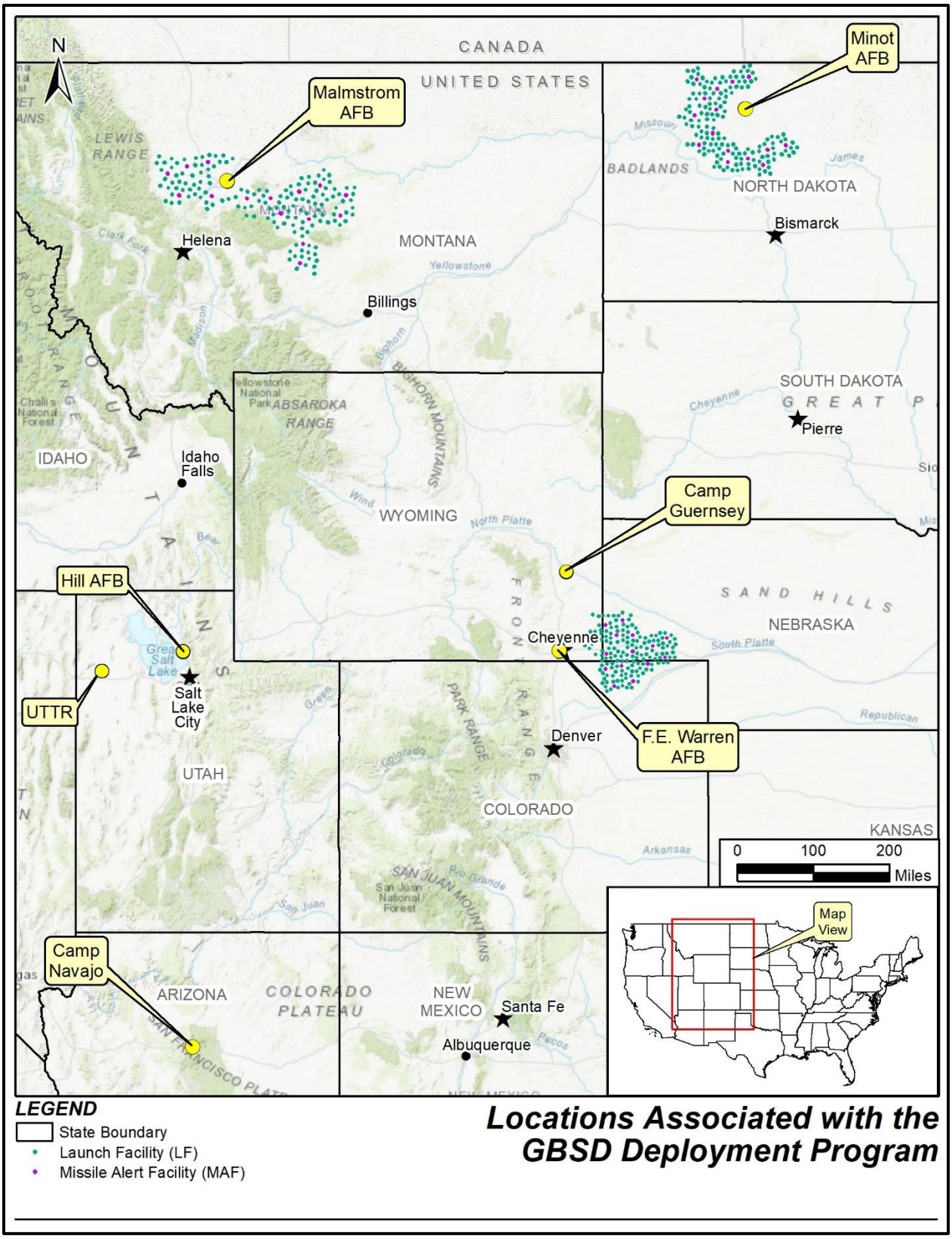
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Cynthia Butler, Executive Administrative Assistant
Matt Reed, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

President Shelley Buck
Prairie Island Indian Community
Prairie Island Indian Reservation
5636 Sturgeon Lake Road
Welch MN 55089

Dear President Buck

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Prairie Island Indian Community throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Prairie Island Indian Community enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

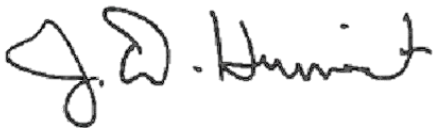
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Prairie Island Indian Community throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

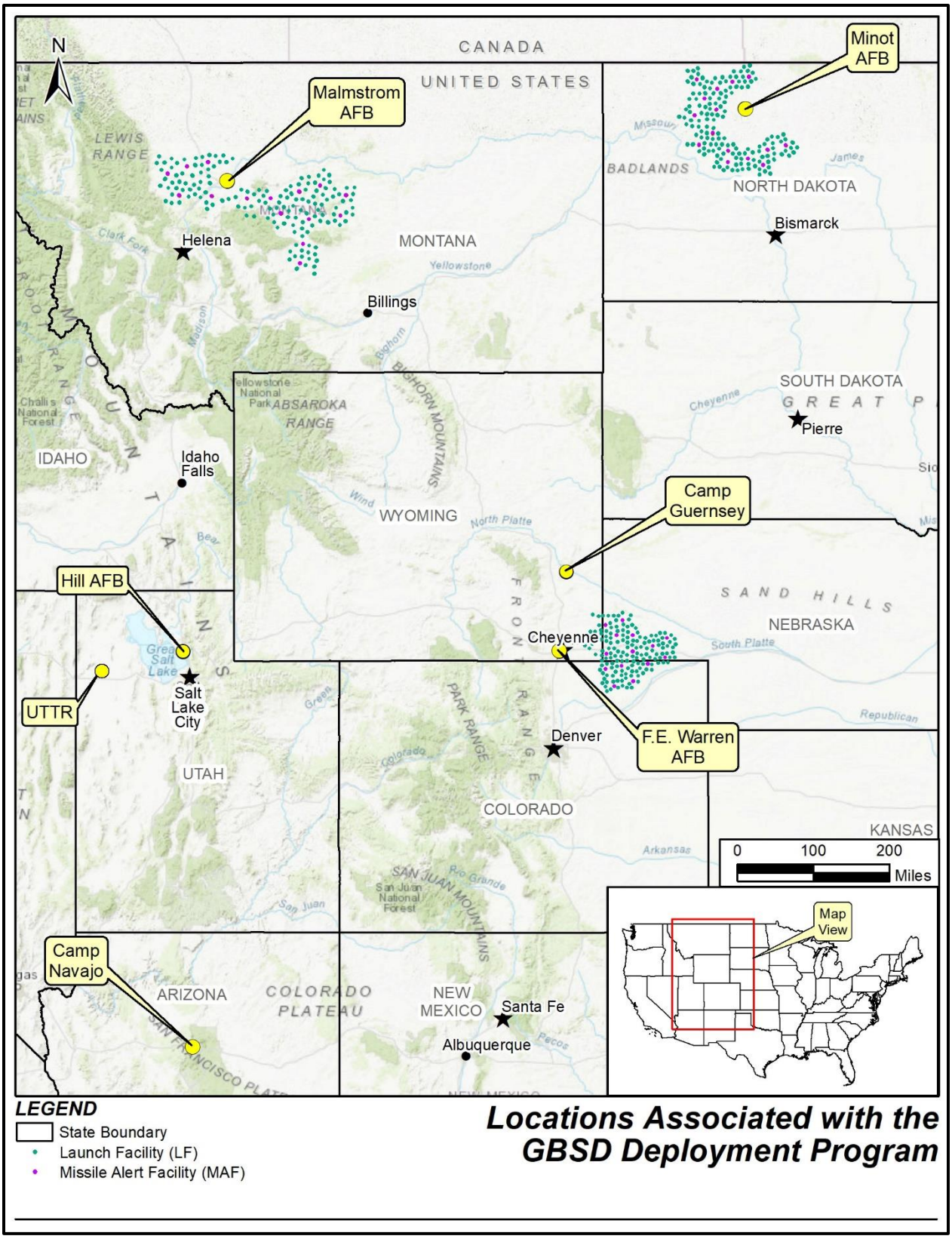
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Lucy Taylor, Vice President
Jody Johnson, Tribal Council Executive Assistant


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Governor Richard Aspenwind
Pueblo of Taos
P.O. Box 1846
Taos NM 87571

Dear Governor Aspenwind

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Pueblo of Taos throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Pueblo of Taos enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

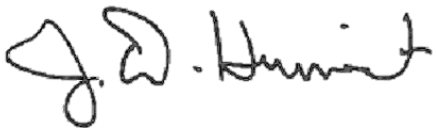
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Pueblo of Taos throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

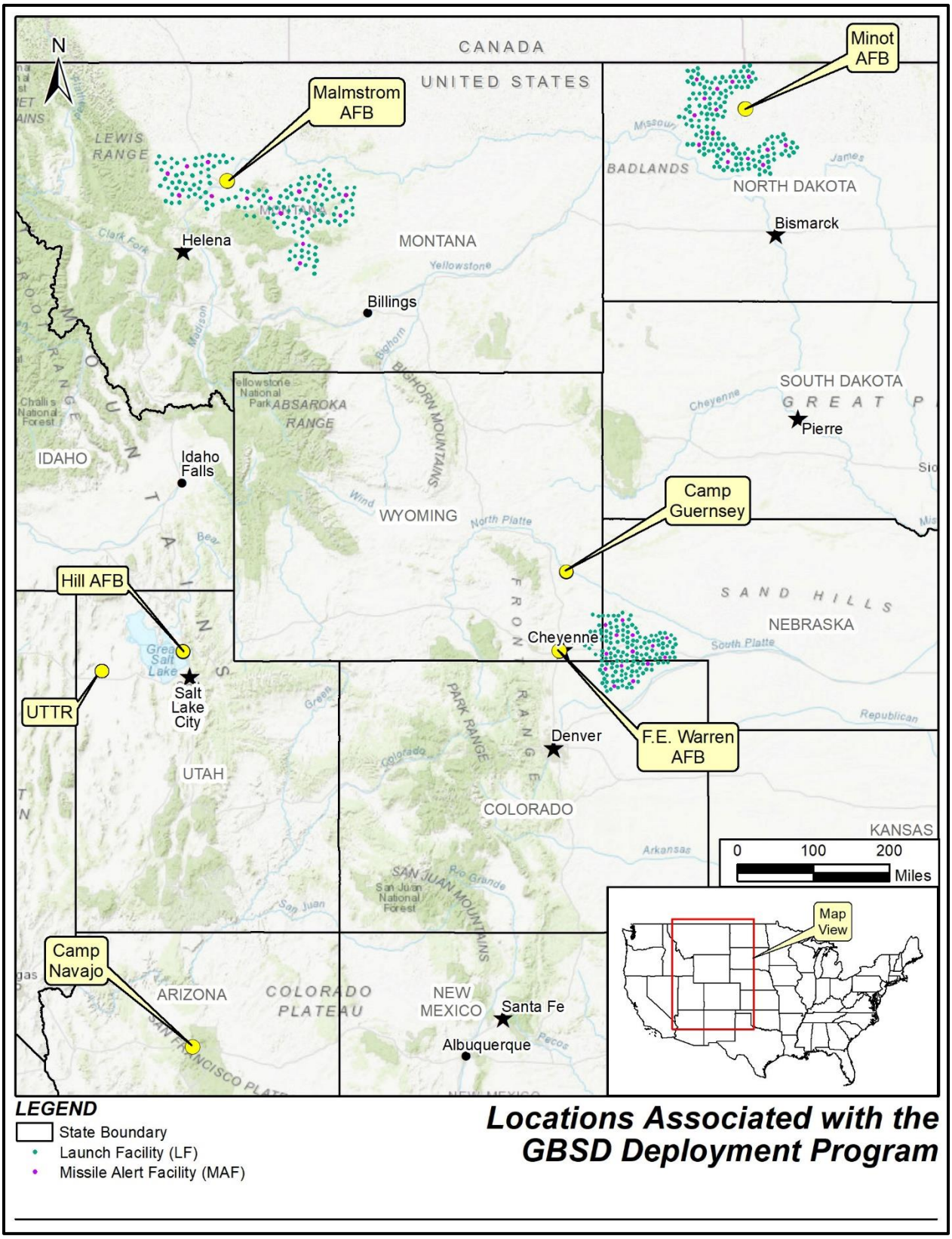
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Bernard Lujan, War Chief (Historic Preservation)


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Governor Val Panteah, Sr.
Pueblo of Zuni
P.O. Box 339, 1203B State Highway 53
Zuni NM 87327

Dear Governor Panteah

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Pueblo of Zuni throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Pueblo of Zuni enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

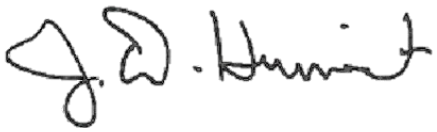
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Pueblo of Zuni throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

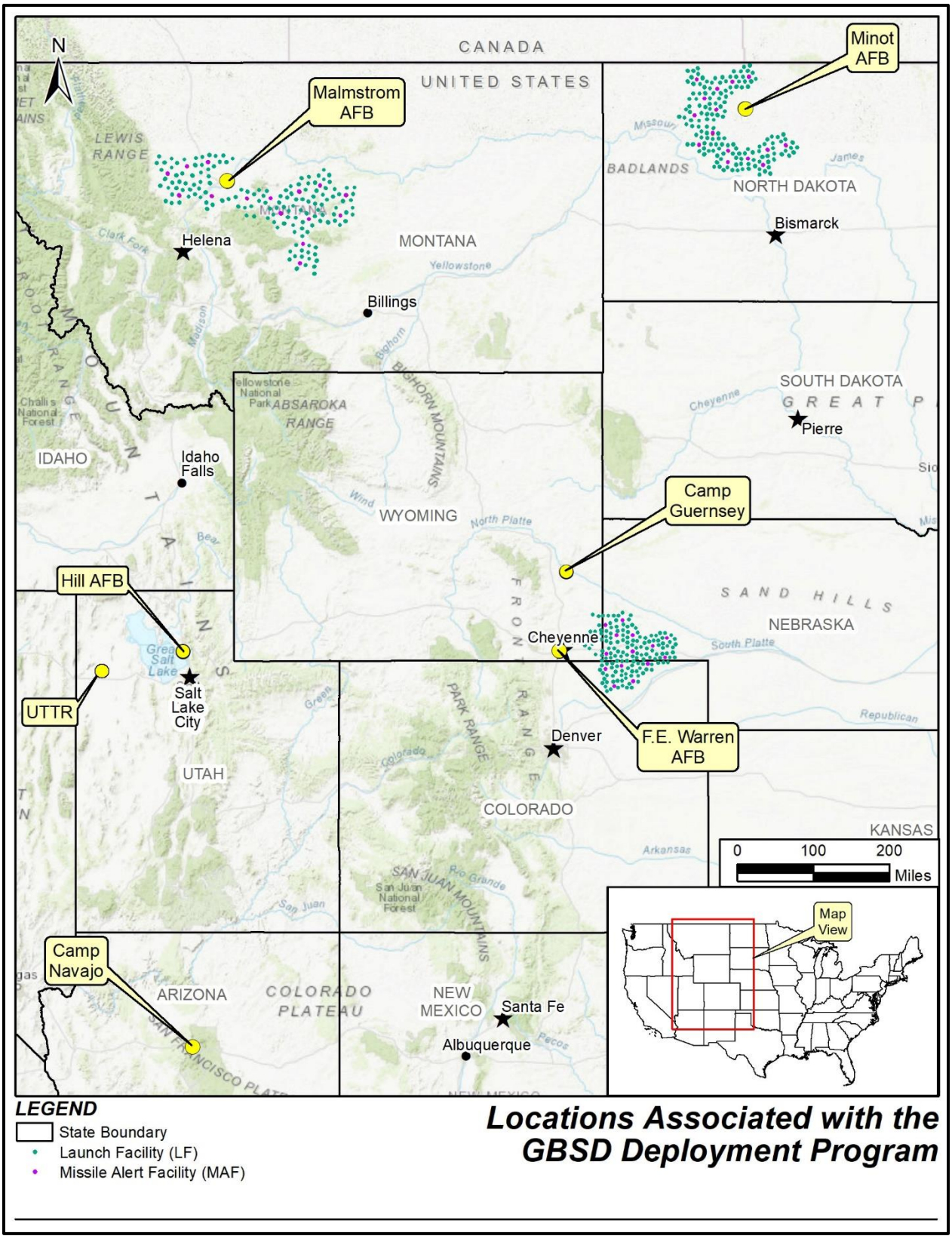
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Carlton Bowekaty, Lieutenant Governor
Kurt Dongoske, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Darrell Seki, Sr.
Red Lake Band of Chippewa Indians
Red Lake Reservation
P.O. Box 550
Red Lake MN 56671

Dear Chairman Seki

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Red Lake Band of Chippewa Indians throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Red Lake Band of Chippewa Indians enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

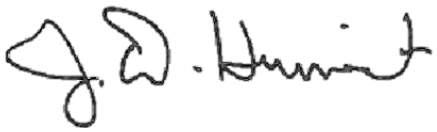
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Red Lake Band of Chippewa Indians throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

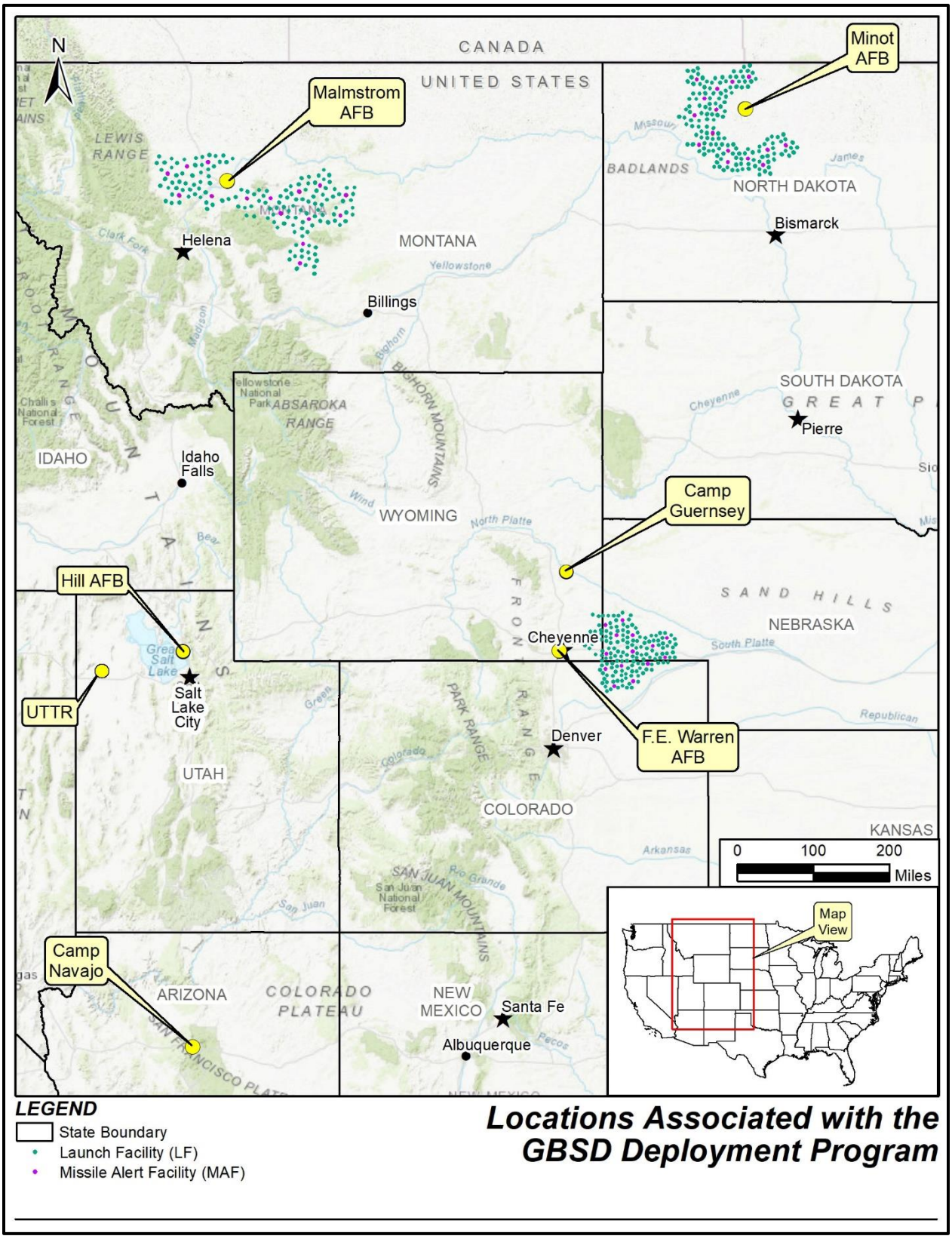
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Kade Ferris, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

President Rodney M. Bordeaux
Rosebud Sioux Tribe
Rosebud Indian Reservation
P.O. Box 430, 11 Legion Avenue
Rosebud SD 57570

Dear President Bordeaux

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Rosebud Sioux Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Rosebud Sioux Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

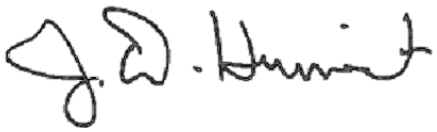
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Rosebud Sioux Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

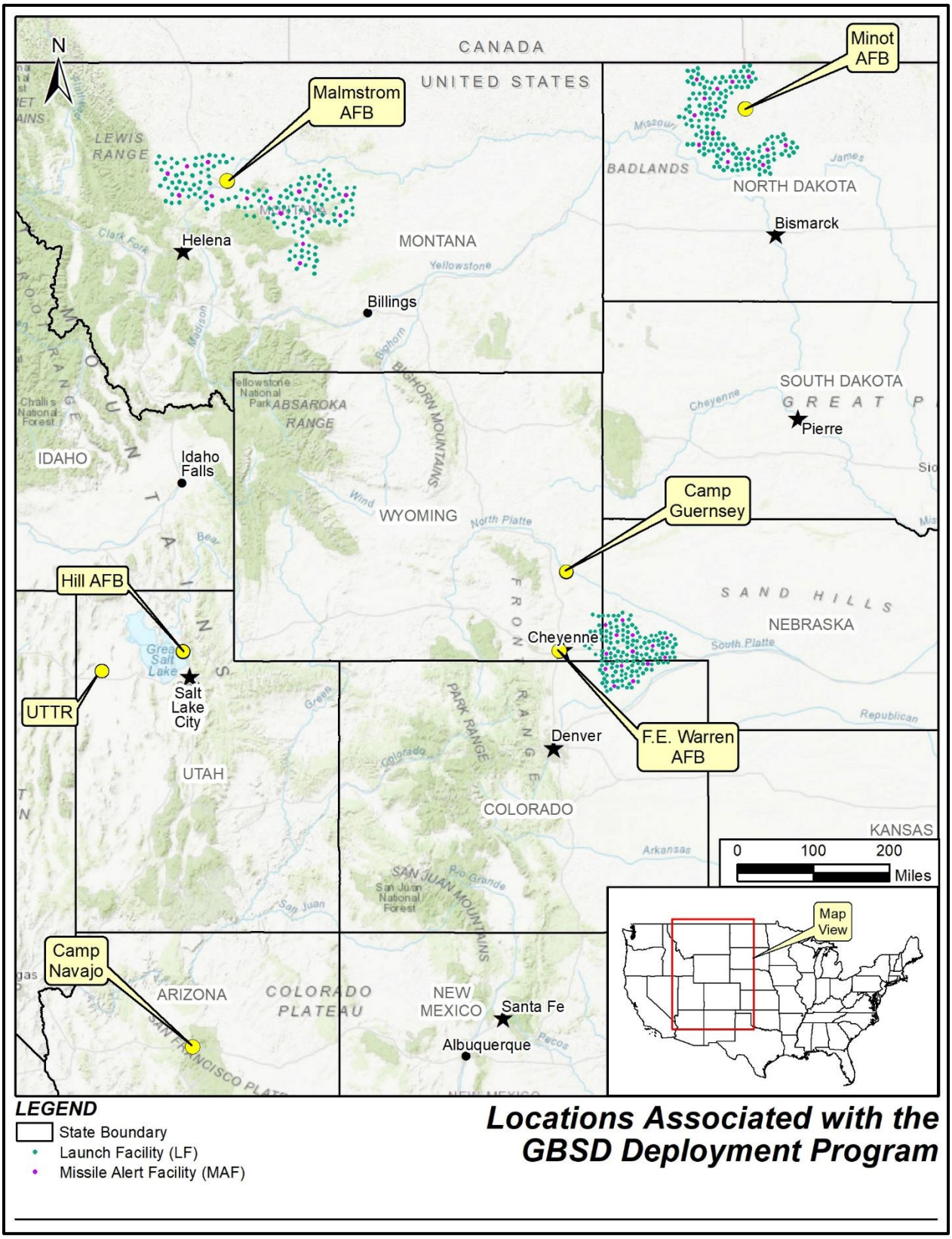
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Nicole Marshall, Executive Administrative Assistant
Benjamin K. Rhodd, THPO, NAGPRA Contact
Benjamin Young, THPO Compliance Officer


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

President Carlene Yellowhair
San Juan Southern Paiute Tribe of Arizona
P.O. Box 2950
Tuba City AZ 86045

Dear President Yellowhair

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the San Juan Southern Paiute Tribe of Arizona throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the San Juan Southern Paiute Tribe of Arizona enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

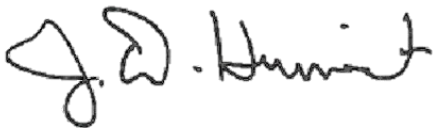
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the San Juan Southern Paiute Tribe of Arizona throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

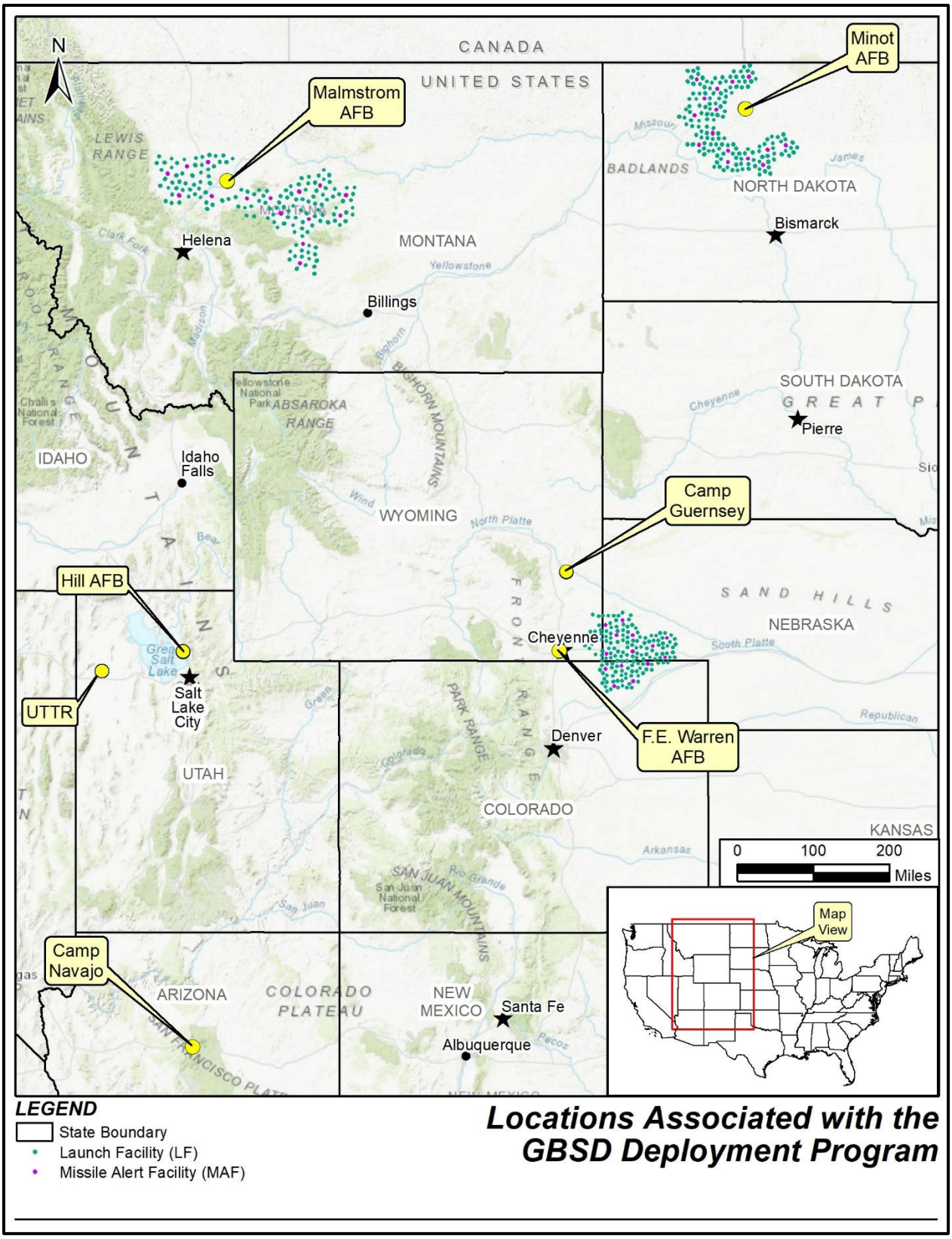
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Candelora Lehi, Vice President
Tamara Talaswaima, Tribal Secretary
Jack Conovaloff, Tribal Administrator


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Roger Trudell
Santee Sioux Nation
Santee Sioux Reservation
108 Spirit Lake Avenue West
Niobrara NE 68760

Dear Chairman Trudell

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Santee Sioux Nation throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Santee Sioux Nation enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

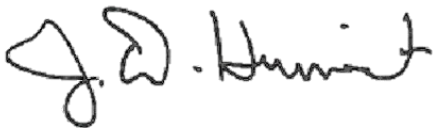
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Santee Sioux Nation throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

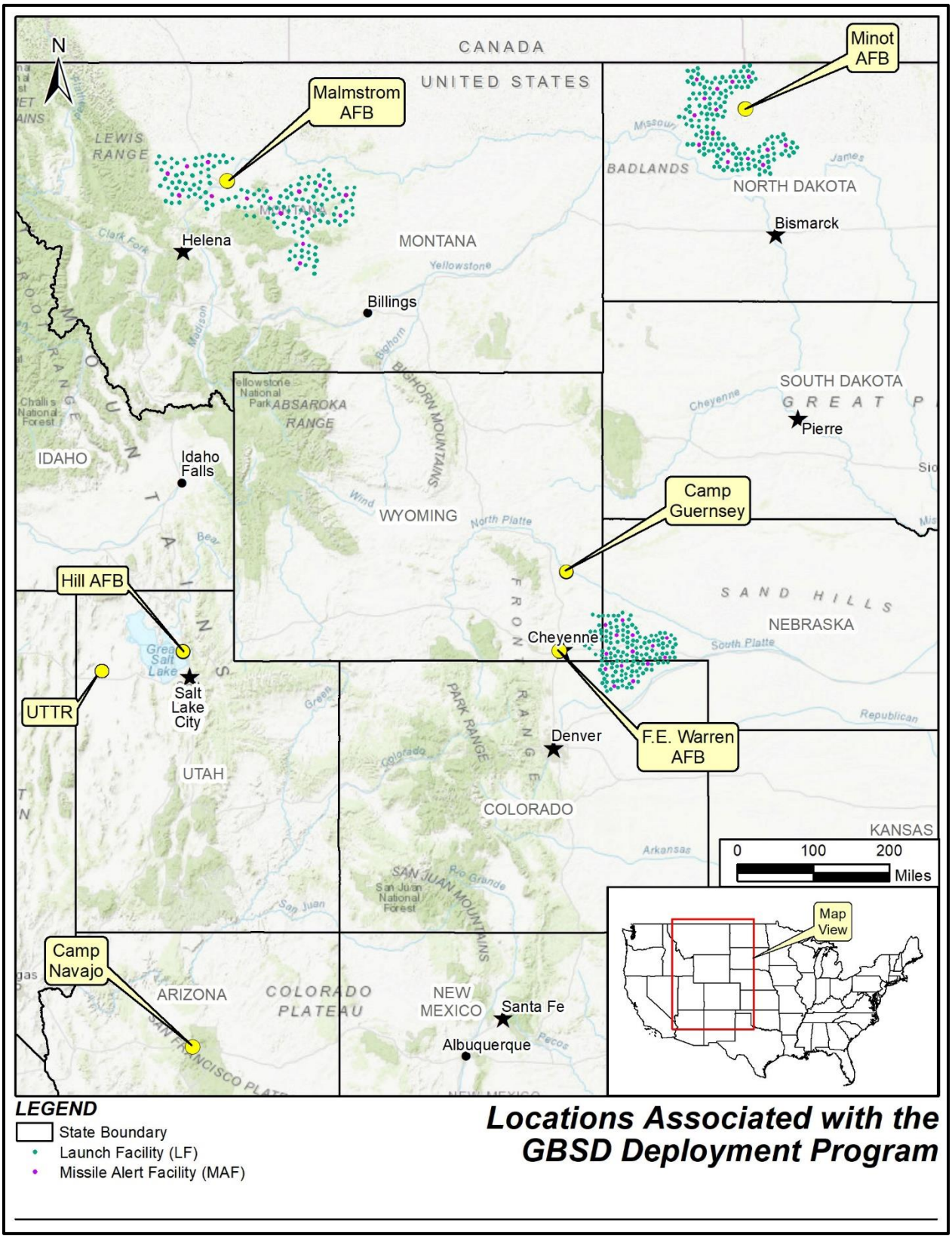
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Duane Whipple, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Keith Anderson
Shakopee Mdewakanton Indian Community
Shakopee-Mdewakanton Reservation
2330 Sioux Trail NW
Prior Lake MN 55372

Dear Chairman Anderson

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Shakopee Mdewakanton Indian Community throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Shakopee Mdewakanton Indian Community enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

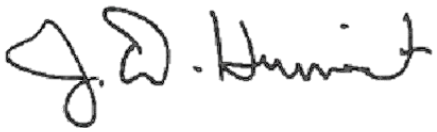
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Shakopee Mdewakanton Indian Community throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

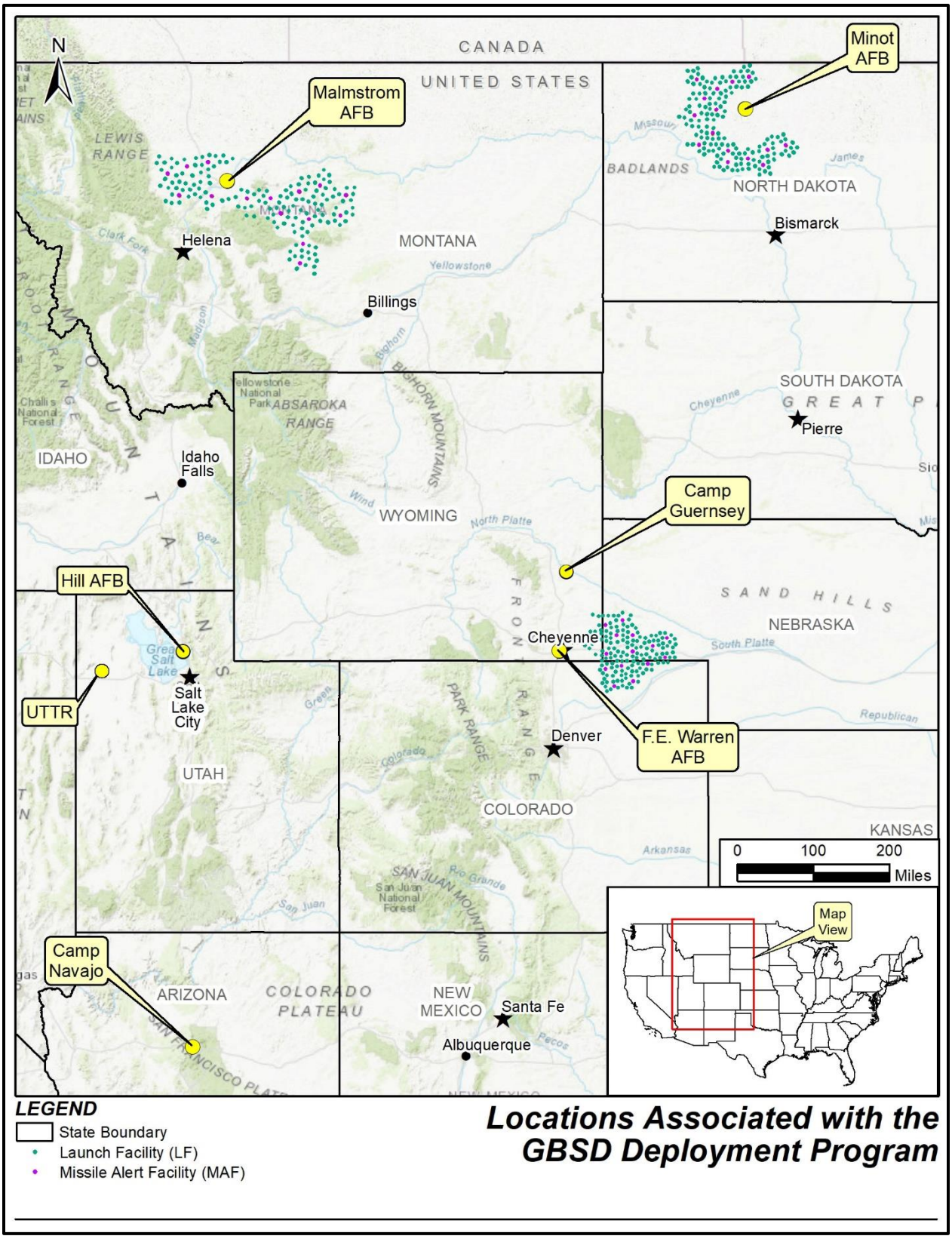
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Leonard Wabasha, Director, Cultural Resources


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Charlie Vig
Shakopee Mdewakanton Sioux Community
Shakopee-Mdewakanton Reservation
2330 Sioux Trail NW
Prior Lake MN 55372

Dear Chairman Vig

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Shakopee Mdewakanton Sioux Community throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Shakopee Mdewakanton Sioux Community enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

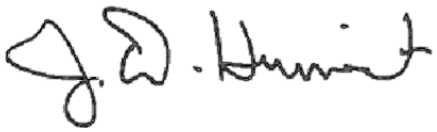
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Shakopee Mdewakanton Sioux Community throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

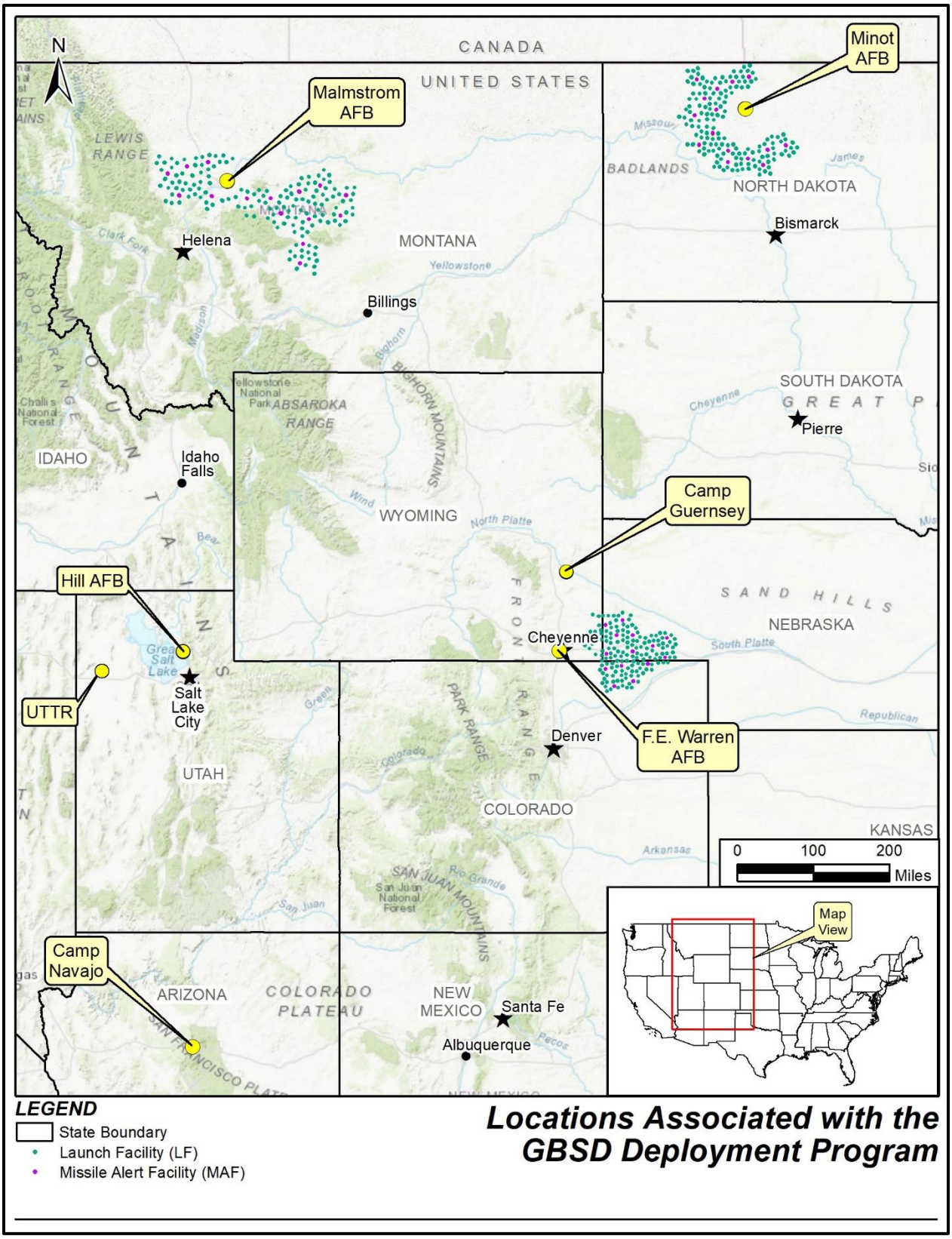
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Leonard Wabasha, Director, Cultural Resources


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Ladd Edmo
Shoshone-Bannock Tribes
Fort Hall Reservation
P.O. Box 306
Fort Hall ID 83203

Dear Chairman Edmo

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Shoshone-Bannock Tribes throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Shoshone-Bannock Tribes enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

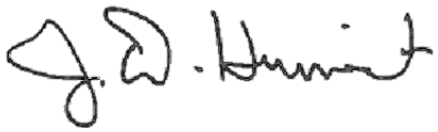
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Shoshone-Bannock Tribes throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

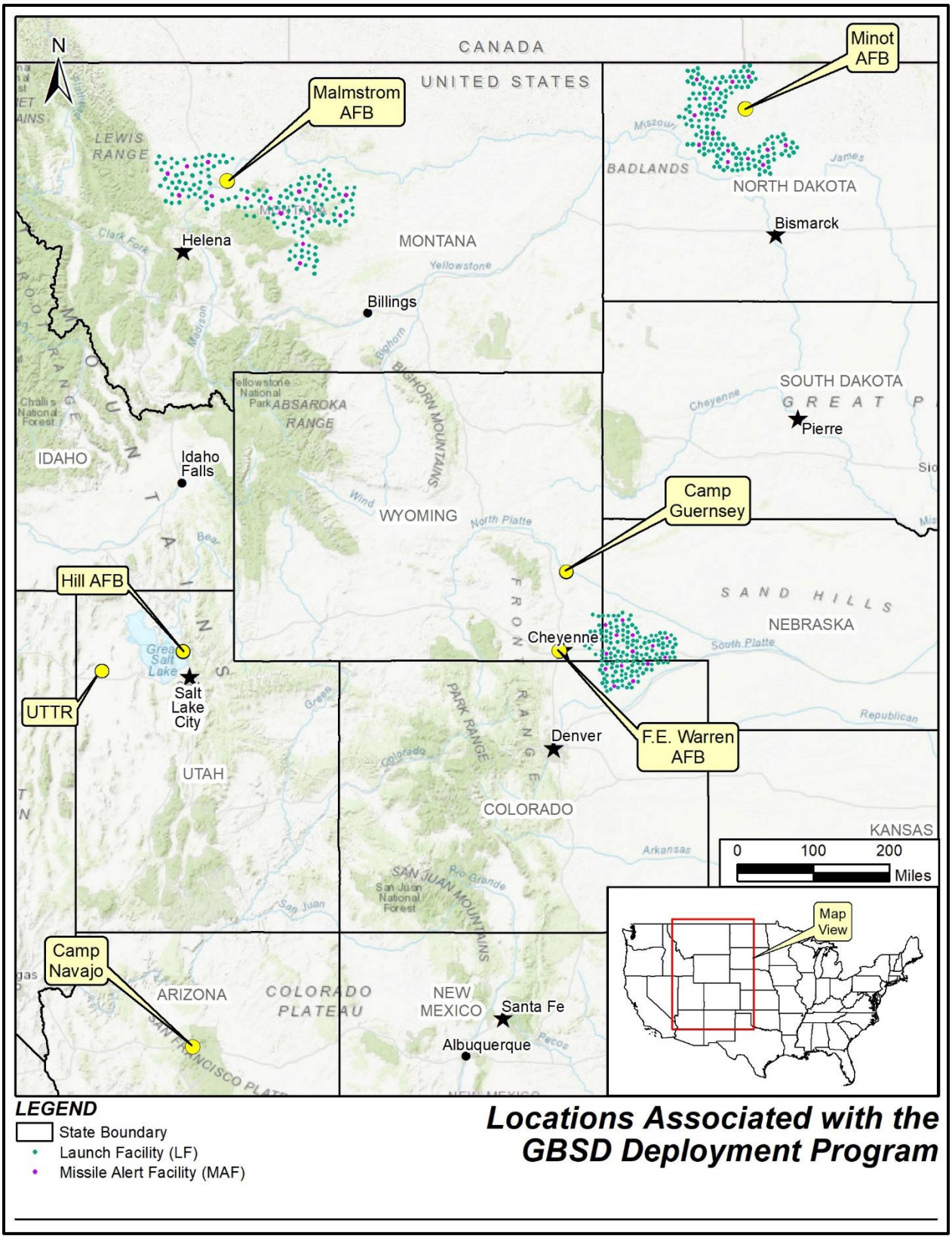
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Donna Thompson, Secretary
Louise Dixey, Cultural Resources Director


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Theodore Howard
Shoshone-Paiute Tribes
Duck Valley Reservation
P.O. Box 219, 1036 Idaho State Highway 51
Owyhee NV 89832

Dear Chairman Howard

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Shoshone-Paiute Tribes throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Shoshone-Paiute Tribes enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

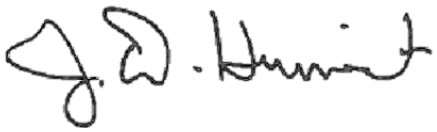
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Shoshone-Paiute Tribes throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

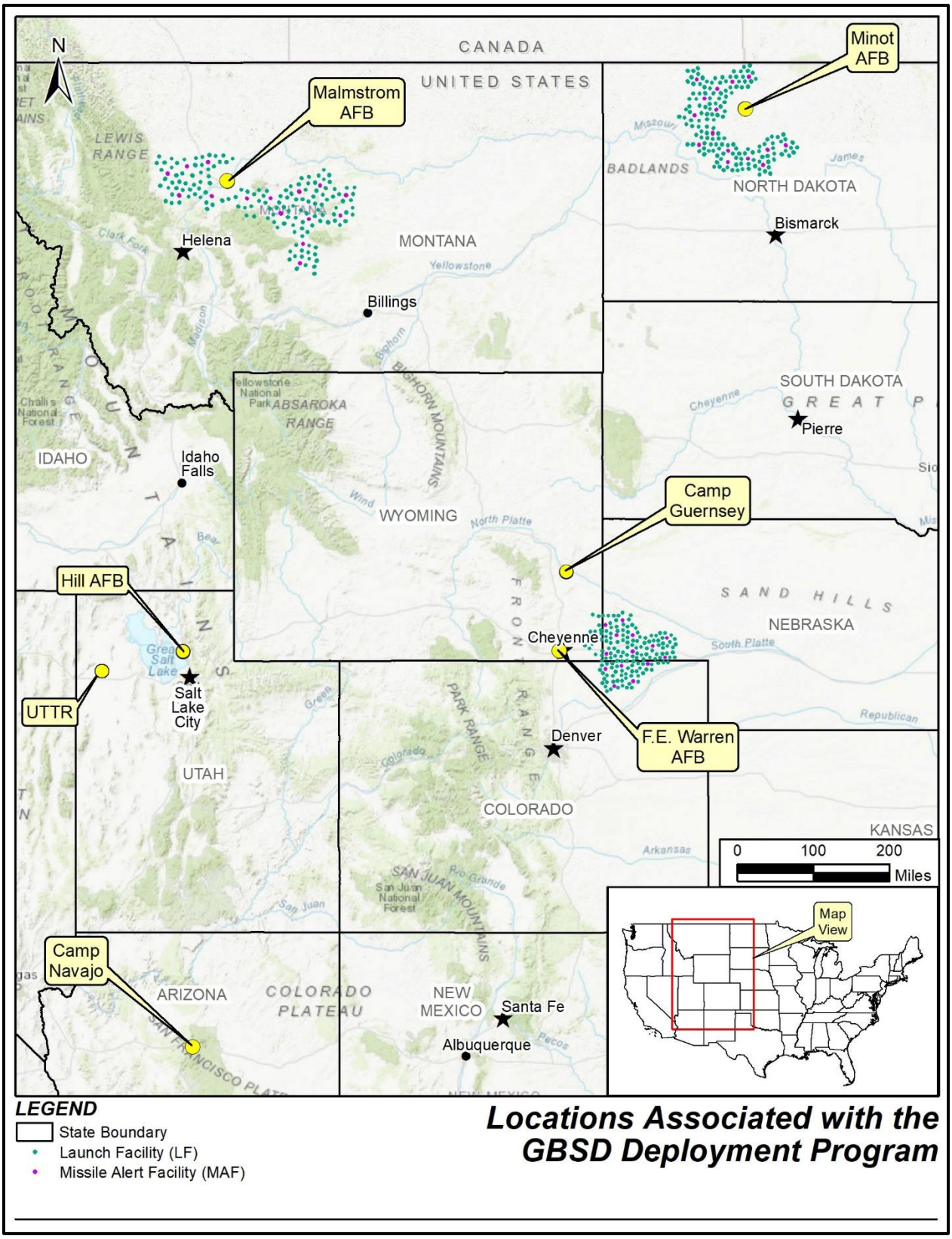
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Yvonne Powers, Secretary
Lynneil Brady, Acting Cultural Resources Director


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Dave Flute
Sisseton-Wahpeton Oyate
Lake Traverse Reservation
P.O. Box 509
Agency Village SD 57262

Dear Chairman Flute

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Sisseton-Wahpeton Oyate throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Sisseton-Wahpeton Oyate enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

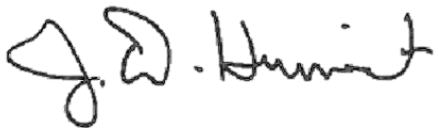
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Sisseton-Wahpeton Oyate throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

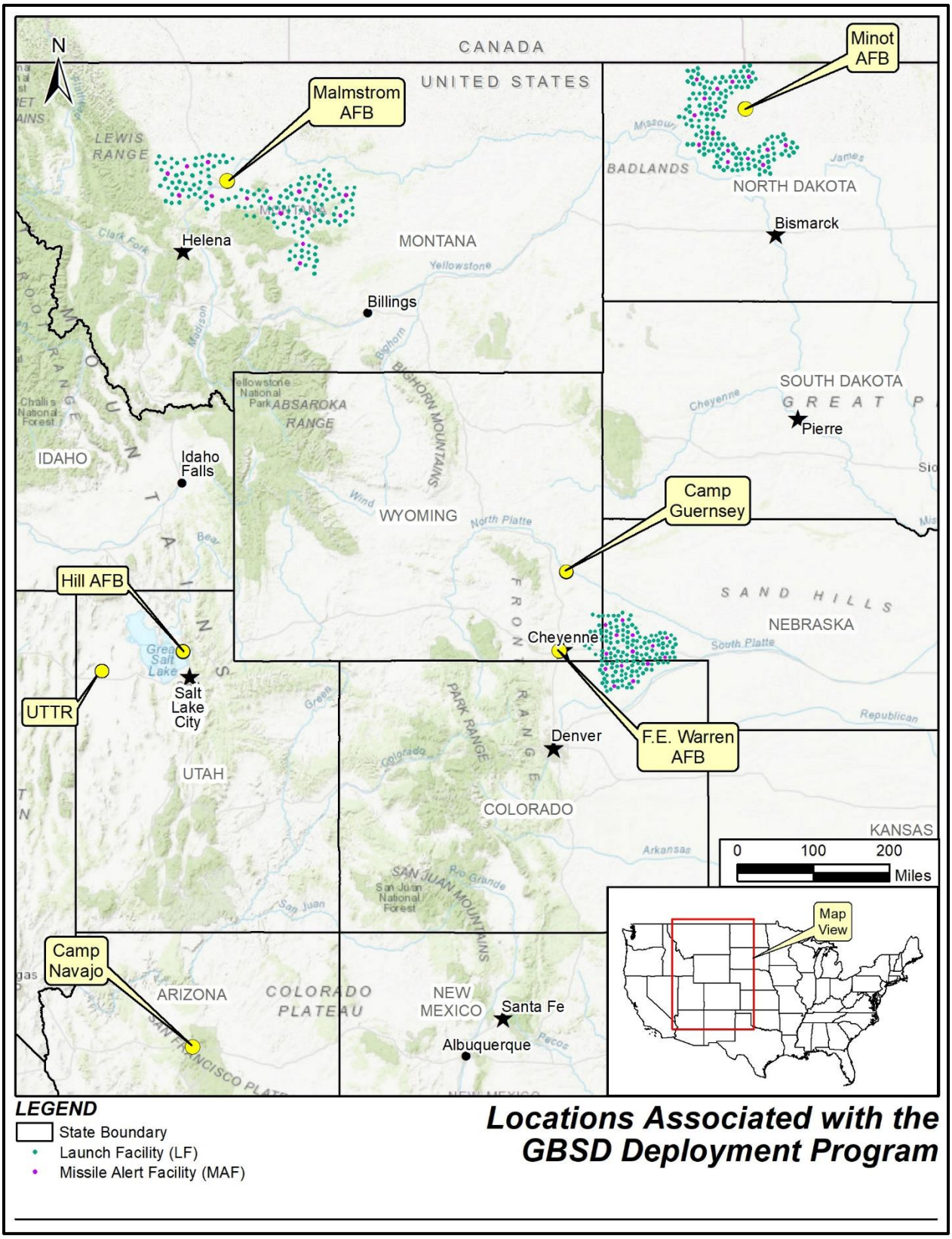
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Diane Desrosiers, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairwoman Candace Bear
Skull Valley Band of Goshute Indians
Skull Valley Indian Reservation
P.O. Box 448
Grantsville UT 84029

Dear Chairwoman Bear

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Skull Valley Band of Goshute Indians throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Skull Valley Band of Goshute Indians enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

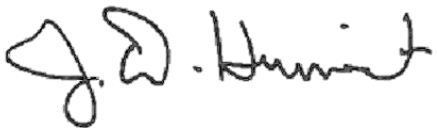
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Skull Valley Band of Goshute Indians throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

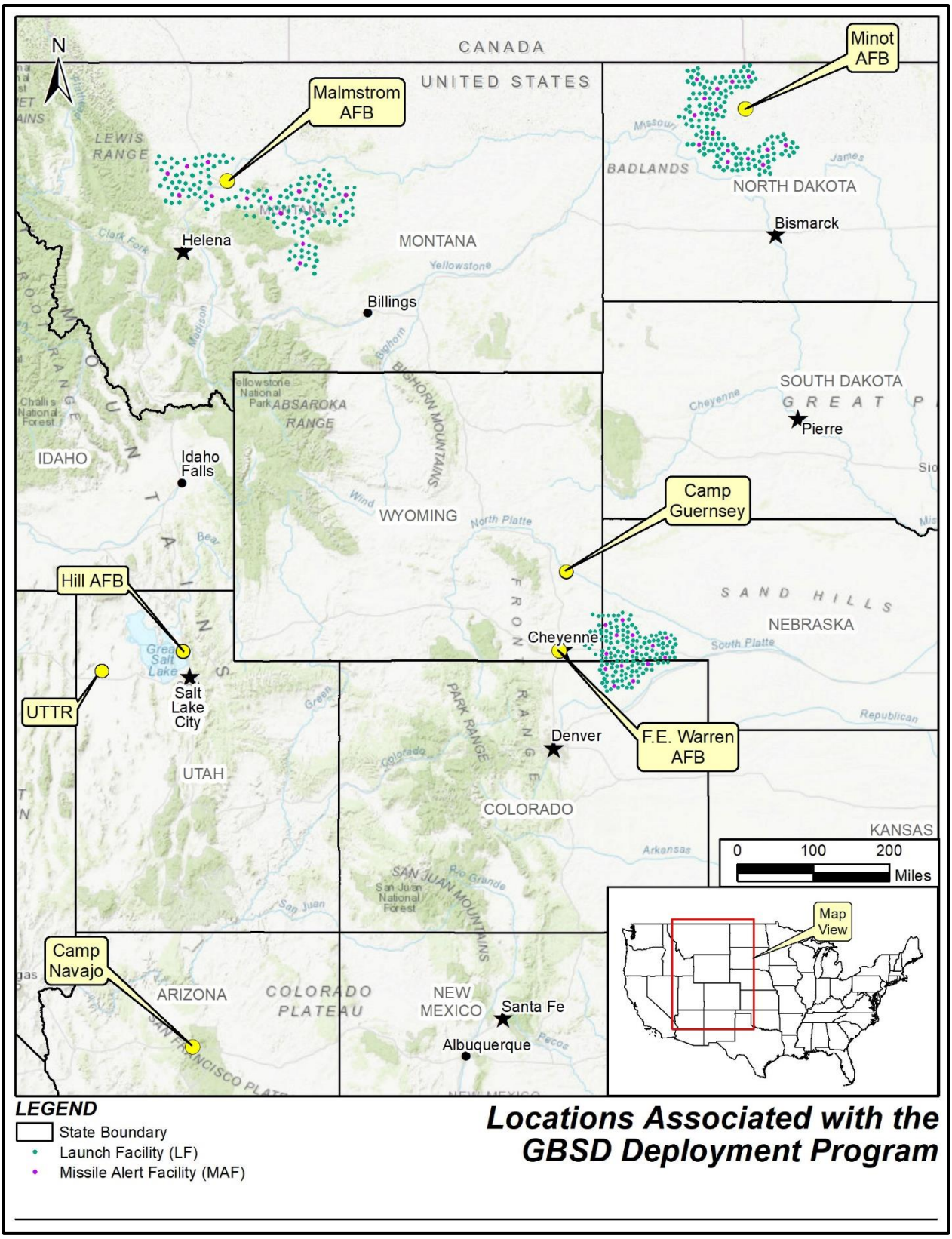
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Sheila Urias, Secretary


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairwoman Christine Sage
Southern Ute Indian Tribe
Southern Ute Reservation
P.O. Box 737, 356 Ouray Drive
Ignacio CO 81137

Dear Chairwoman Sage

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Southern Ute Indian Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Southern Ute Indian Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

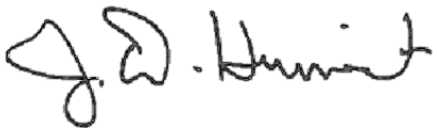
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Southern Ute Indian Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

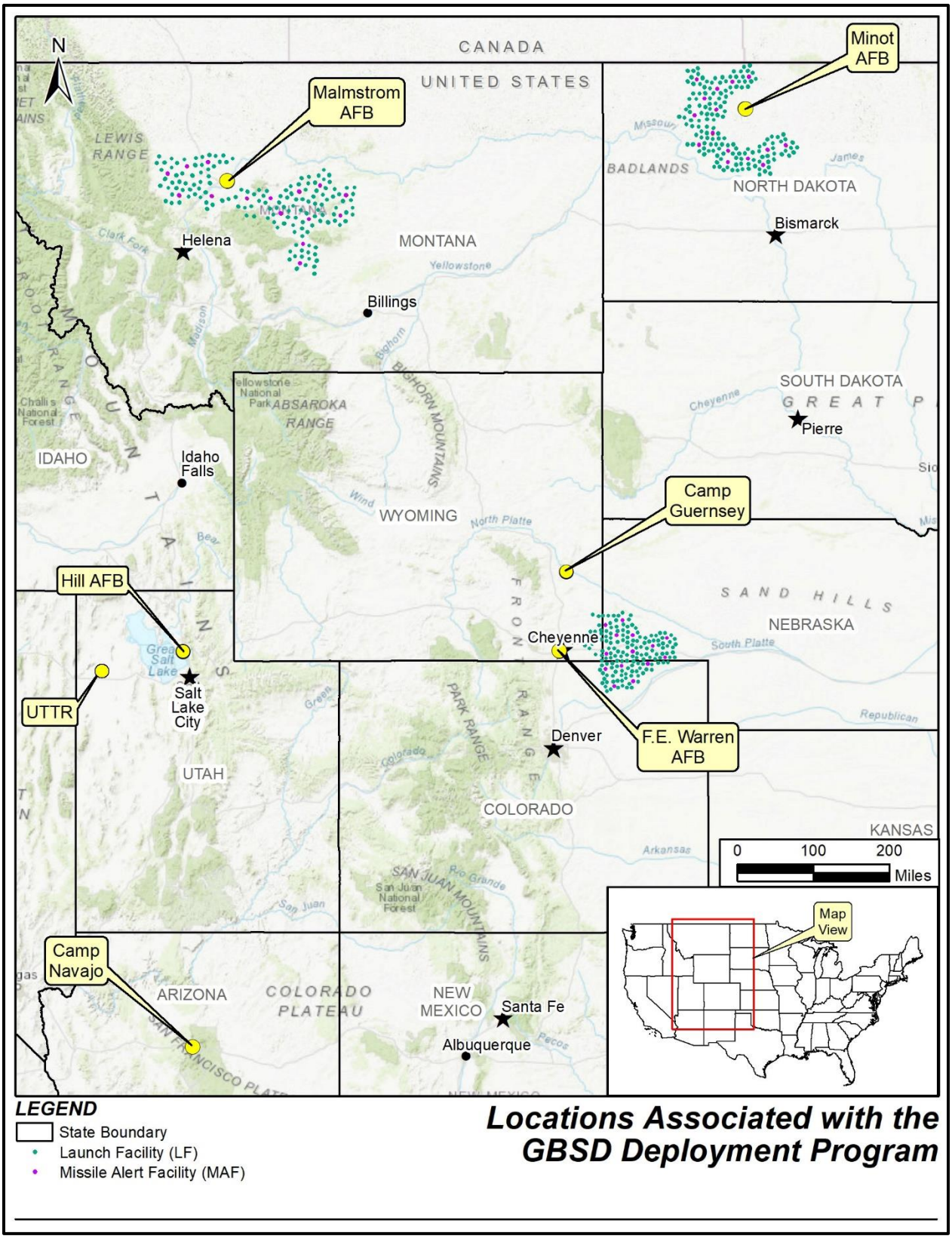
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Sunshine Flores Whyte, Executive Assistant
Shelly Thompson, Cultural Preservation Director
Cassandra Atencio, NAGPRA Coordinator
Garrett Briggs, NAGPRA Apprentice


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairperson Peggy Cavanaugh
Spirit Lake Nation
Spirit Lake Dakota Reservation
P.O. Box 359, 816 Third Avenue North
Fort Totten ND 58335

Dear Chairperson Cavanaugh

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Spirit Lake Nation throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Spirit Lake Nation enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

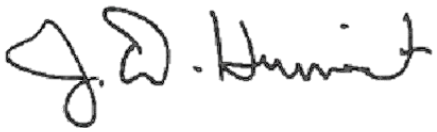
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Spirit Lake Nation throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

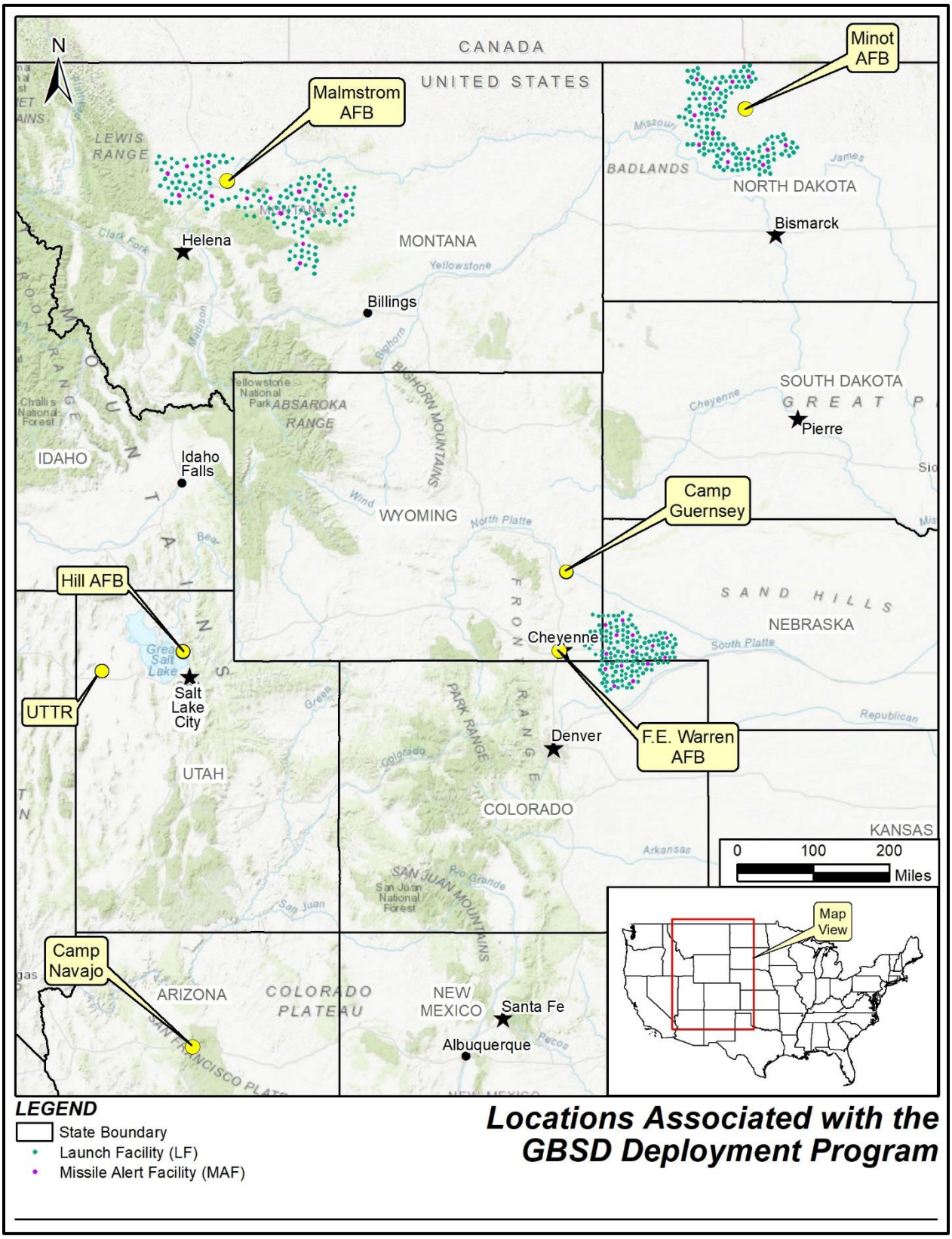
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Lonna Jackson-Street, Tribal Secretary/Treasurer
Dr. Erich Longie, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Mike Faith
Standing Rock Sioux Tribe
Standing Rock Indian Reservation
P.O. Box D, Building #1, North Standing Rock Avenue
Fort Yates ND 58538

Dear Chairman Faith

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Standing Rock Sioux Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Standing Rock Sioux Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

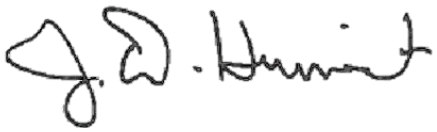
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Standing Rock Sioux Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

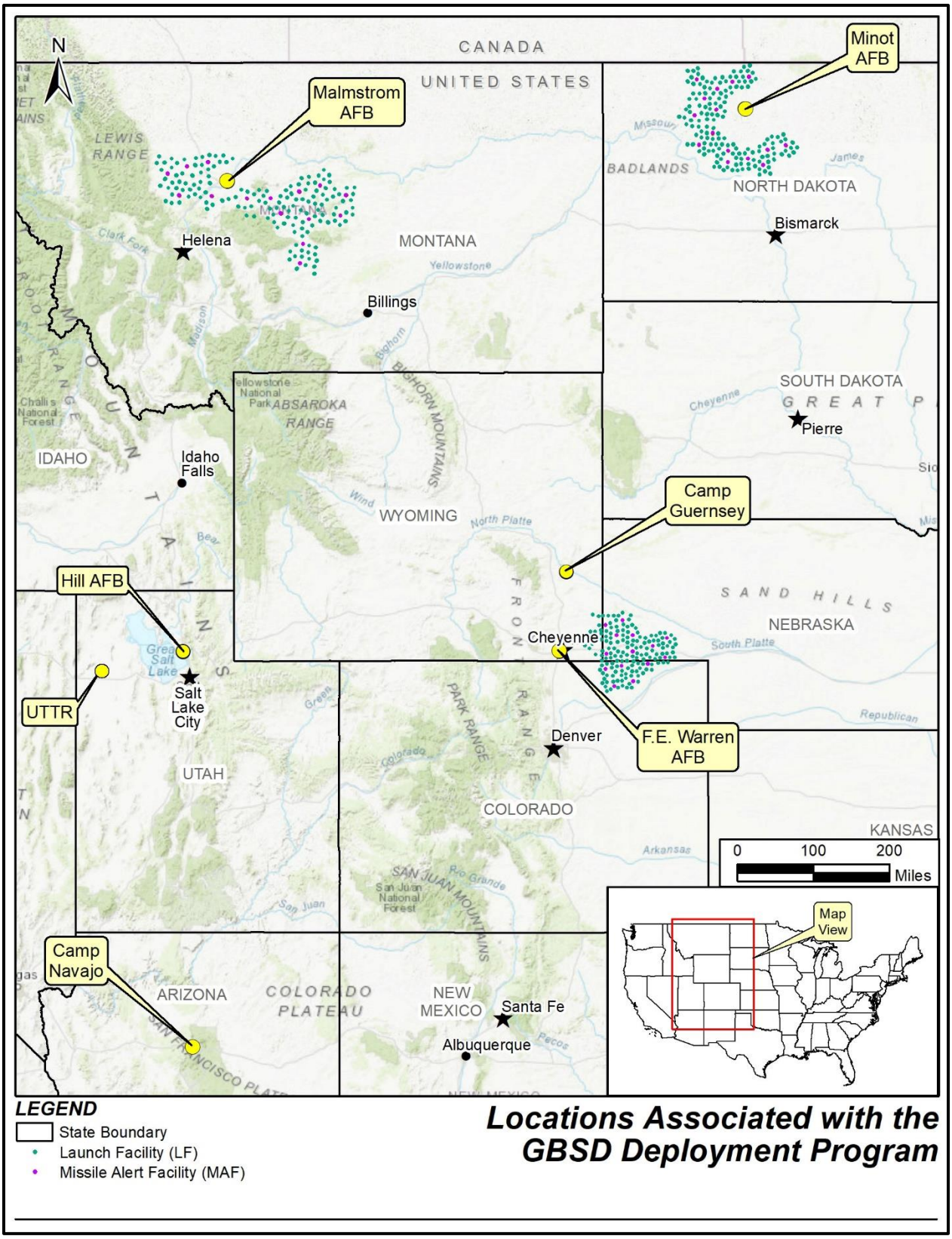
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: A. Cordova, Executive Assistant
Jon Eagle, THPO
Allysa White Bull, THPO Staff


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Vice Chairwoman Charlotte Healy
Te-Moak Tribe - Wells Band of Western Shoshone
P.O. Box 809
Wells NV 89835

Dear Chairwoman Healy

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Te-Moak Tribe - Wells Band of Western Shoshone throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Te-Moak Tribe - Wells Band of Western Shoshone enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

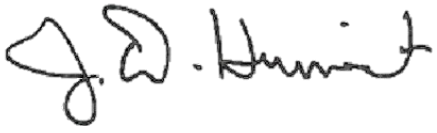
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Te-Moak Tribe - Wells Band of Western Shoshone throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

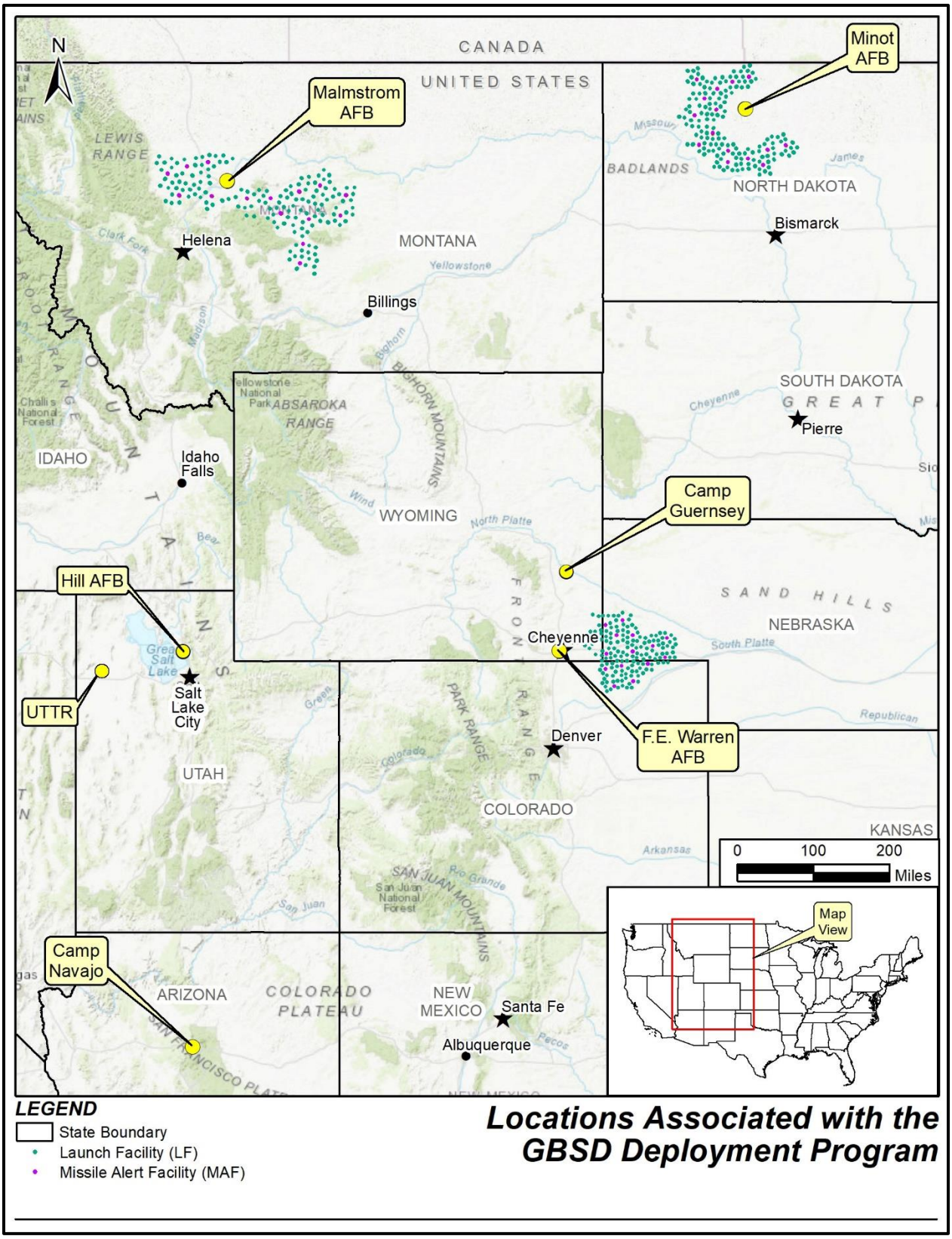
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Alicia Aguilar, Tribal Administrator


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Joseph Holley
Te-Moak Tribe of Western Shoshone Indians
525 Sunset Street
Elko NV 89801

Dear Chairman Holley

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Te-Moak Tribe of Western Shoshone Indians throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Te-Moak Tribe of Western Shoshone Indians enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

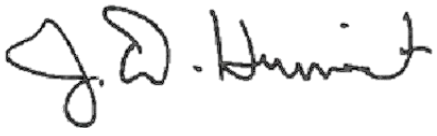
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Te-Moak Tribe of Western Shoshone Indians throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

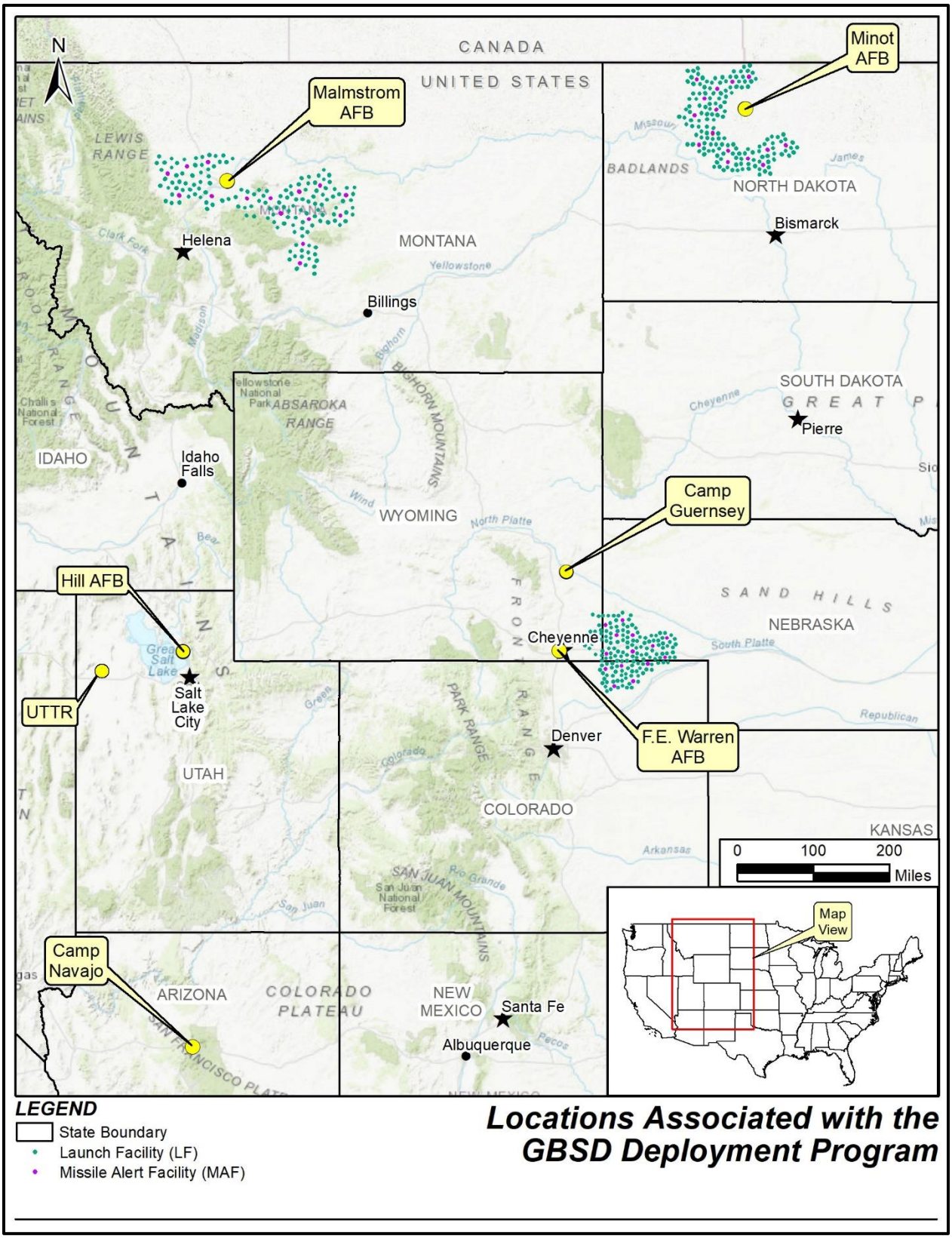
Thank you in advance for your assistance in this effort.

Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
PARK RANGE
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Mark Fox
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Fort Berthold Indian Reservation
404 Frontage Road
New Town ND 58763

Dear Chairman Fox

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

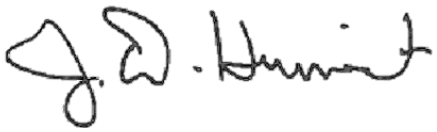
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

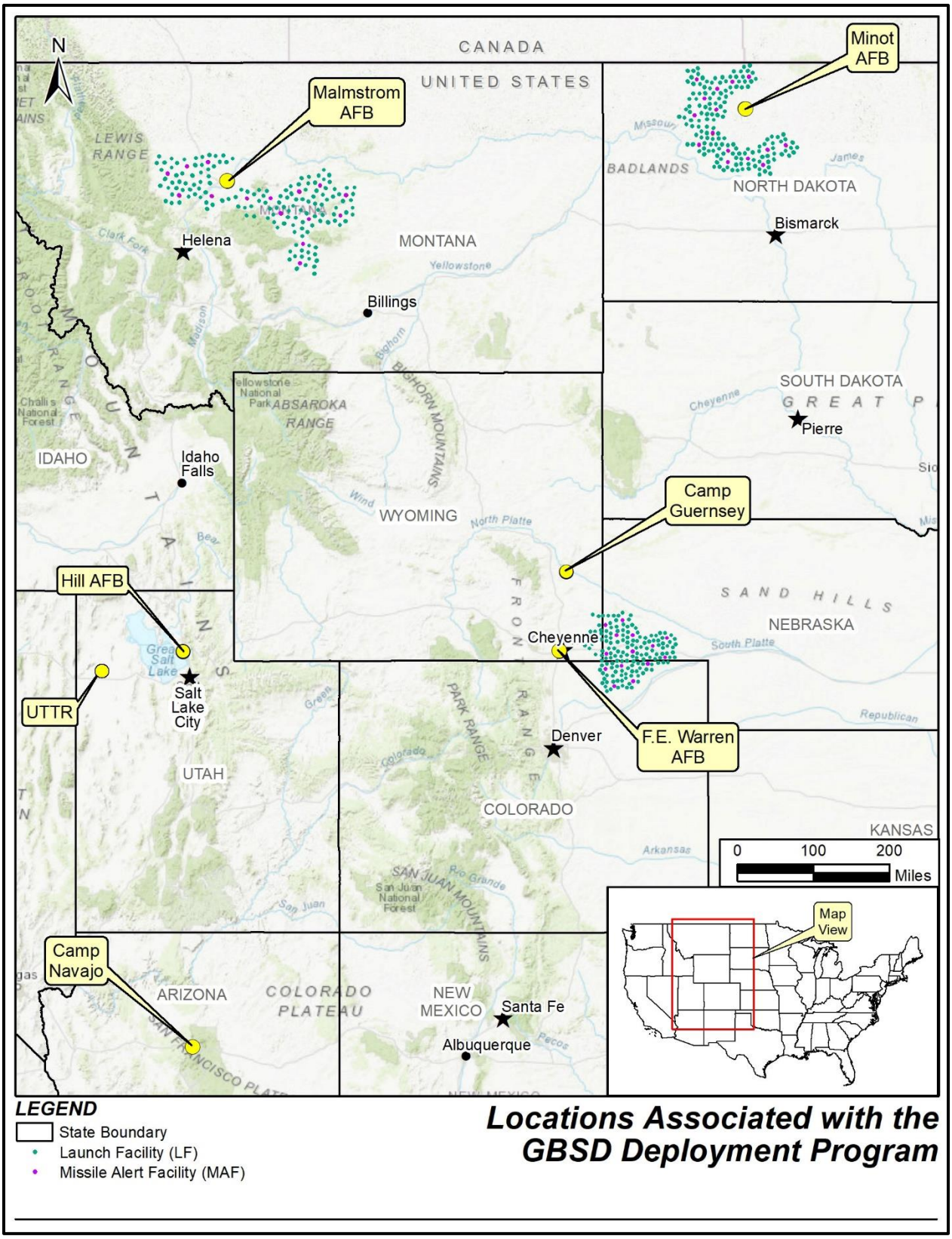
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Pete Coffey, Acting THPO/Compliance Officer


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Jamie Azure
Turtle Mountain Band of Chippewa Indians
Turtle Mountain Indian Reservation
P.O. Box 900
Belcourt ND 58316

Dear Chairman Azure

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Turtle Mountain Band of Chippewa Indians throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Turtle Mountain Band of Chippewa Indians enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

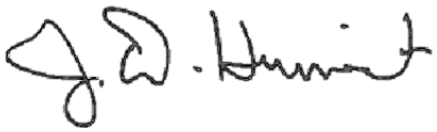
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Turtle Mountain Band of Chippewa Indians throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

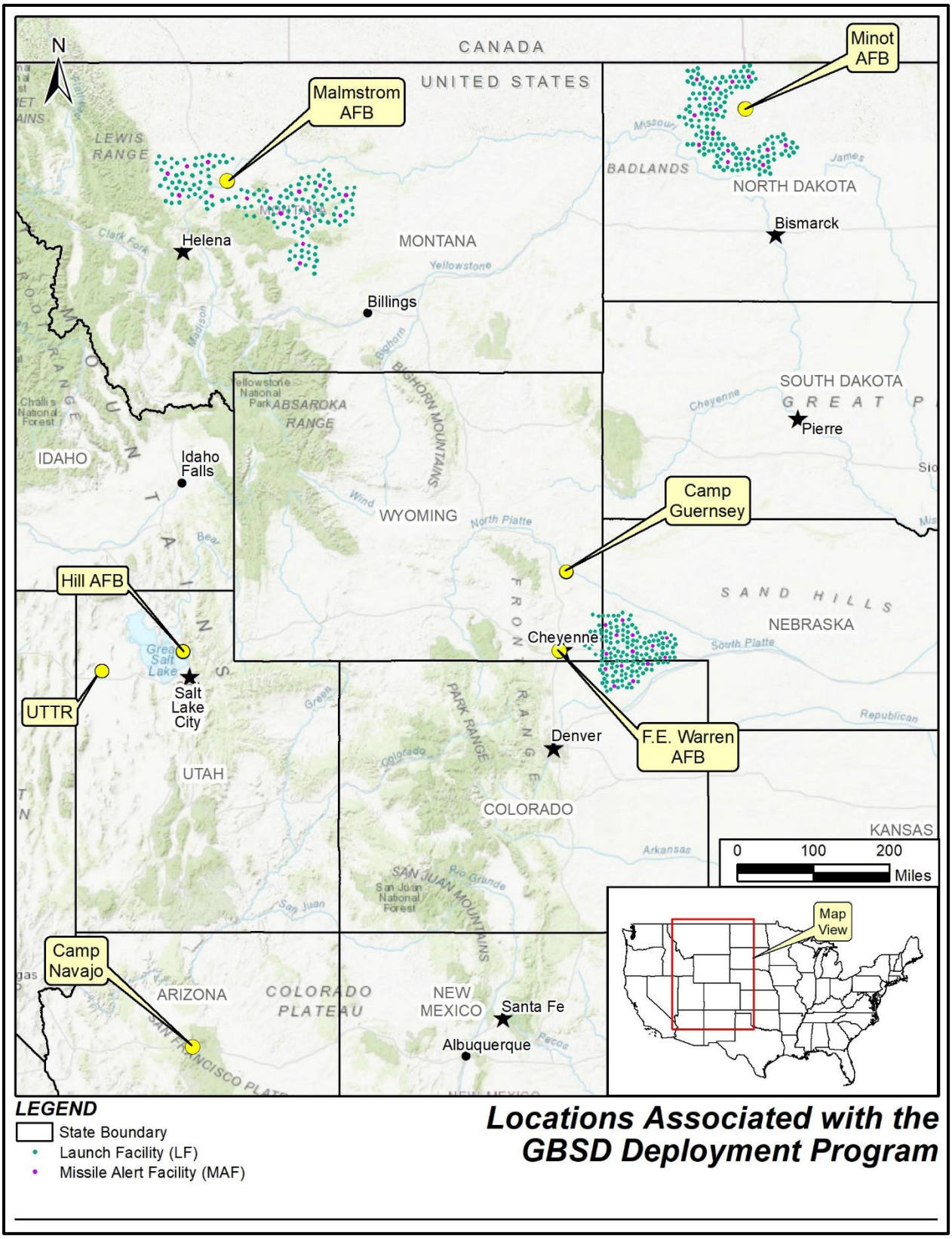
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Jeffrey Desjarlais, Jr., THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Kevin Jensvold
Upper Sioux Indian Community
Upper Sioux Indian Reservation
P.O. Box 147, 5722 Travers Lane
Granite Falls MN 56241

Dear Chairman Jensvold

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Upper Sioux Indian Community throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Upper Sioux Indian Community enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

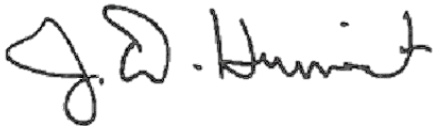
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Upper Sioux Indian Community throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

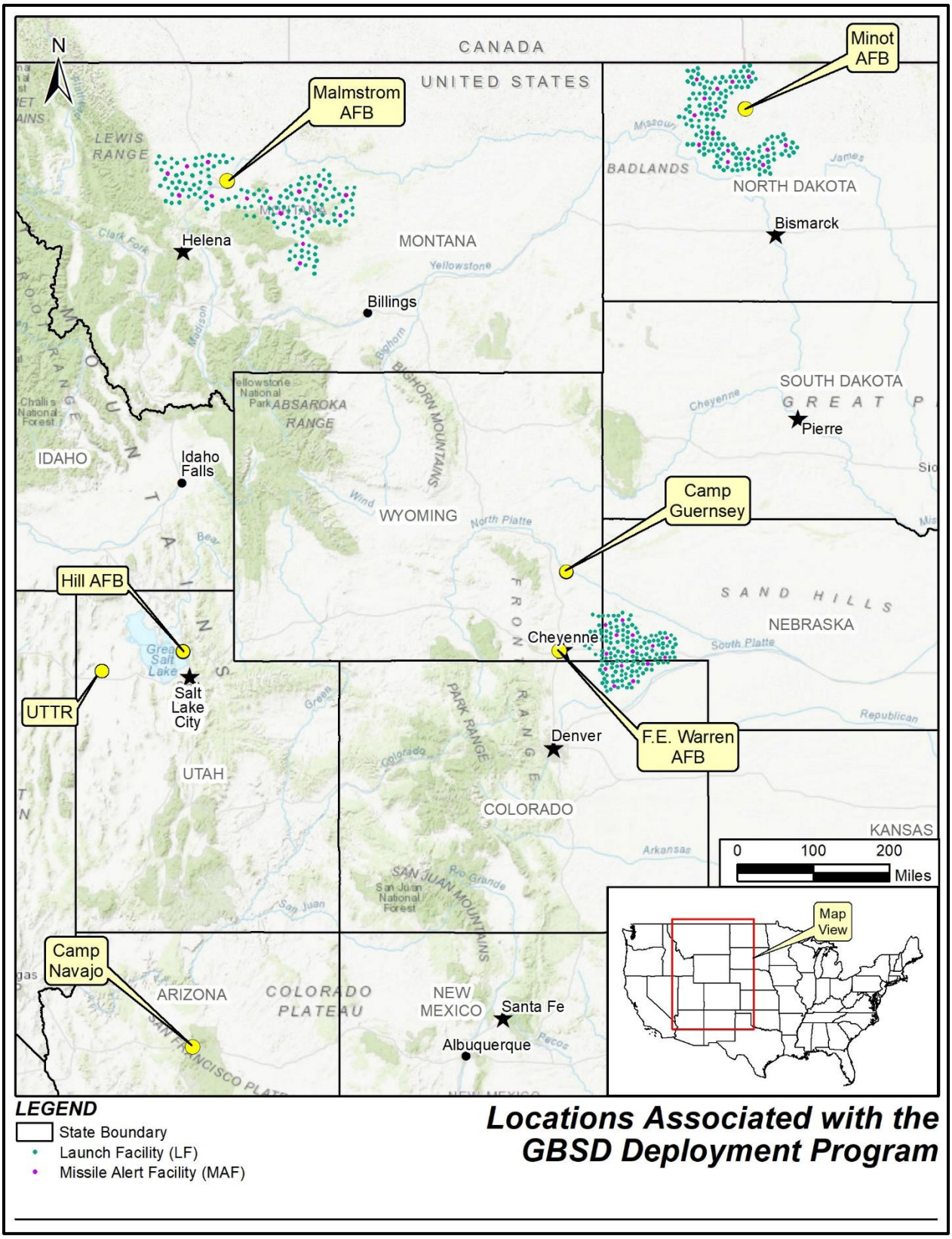
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Samantha Odegard, THPO
Fern Cloud, THPO Assistant
Kristin Ross, THPO Assistant


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Luke Duncan
Ute Indian Tribe of the Uintah & Ouray Reservation
Uintah and Ouray Reservation
P.O. Box 190, 6964 E 1000 South
Ft. Duchesne UT 84026

Dear Chairman Duncan

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Ute Indian Tribe of the Uintah & Ouray Reservation throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Ute Indian Tribe of the Uintah & Ouray Reservation enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

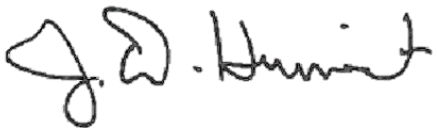
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Ute Indian Tribe of the Uintah & Ouray Reservation throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

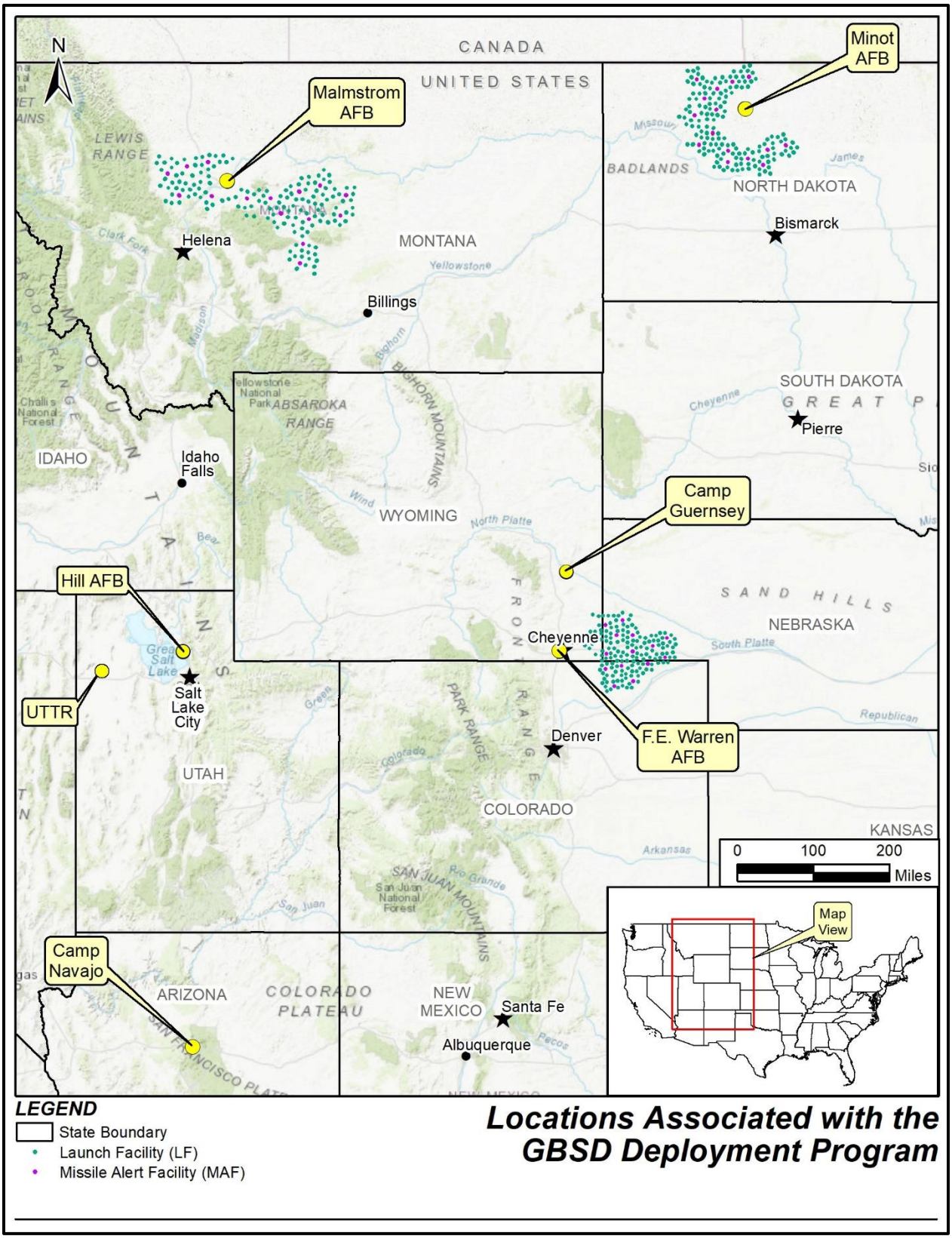
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Betsy Chapoose, Cultural Rights & Protection Director; NAGPRA Representative


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Manuel Heart
Ute Mountain Ute Tribe
Ute Mountain Reservation
P.O. Box JJ, 124 Mike Wash Road
Towaoc CO 81334

Dear Chairman Heart

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Ute Mountain Ute Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Ute Mountain Ute Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

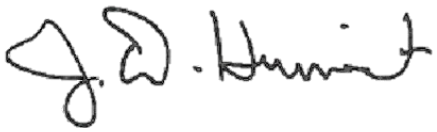
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Ute Mountain Ute Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

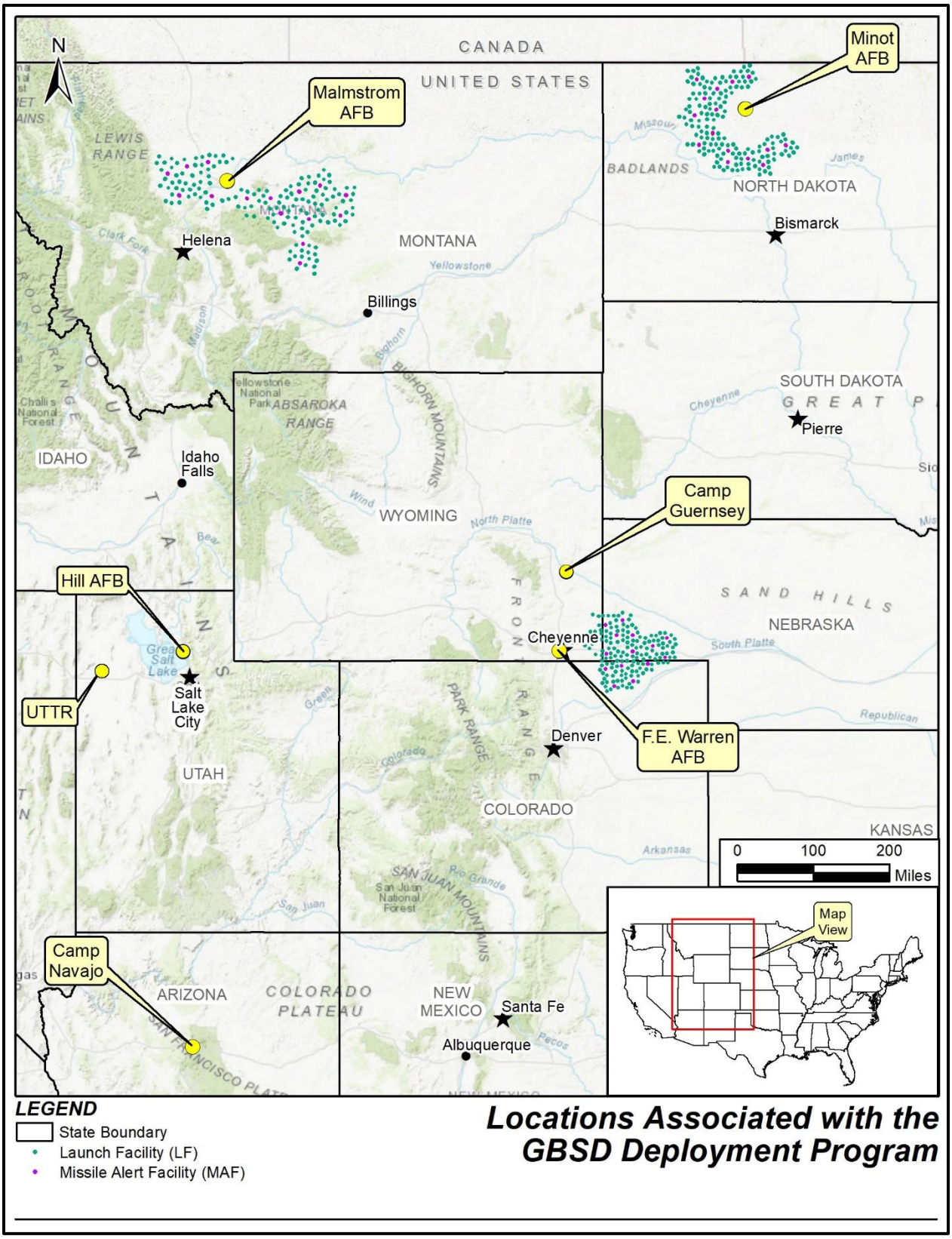
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Terry Knight, THPO/NAGPRA Representative
Nichol Shurack, Cultural Resources Director, Tribal Archaeologist


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Terrence "Terry" Tibbetts
White Earth Nation of Minnesota Chippewa
White Earth Reservation
P.O. Box 418
White Earth MN 56591

Dear Chairman Tibbetts

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the White Earth Nation of Minnesota Chippewa throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the White Earth Nation of Minnesota Chippewa enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

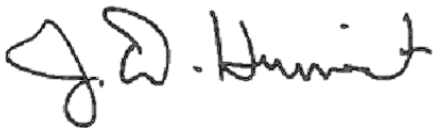
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the White Earth Nation of Minnesota Chippewa throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

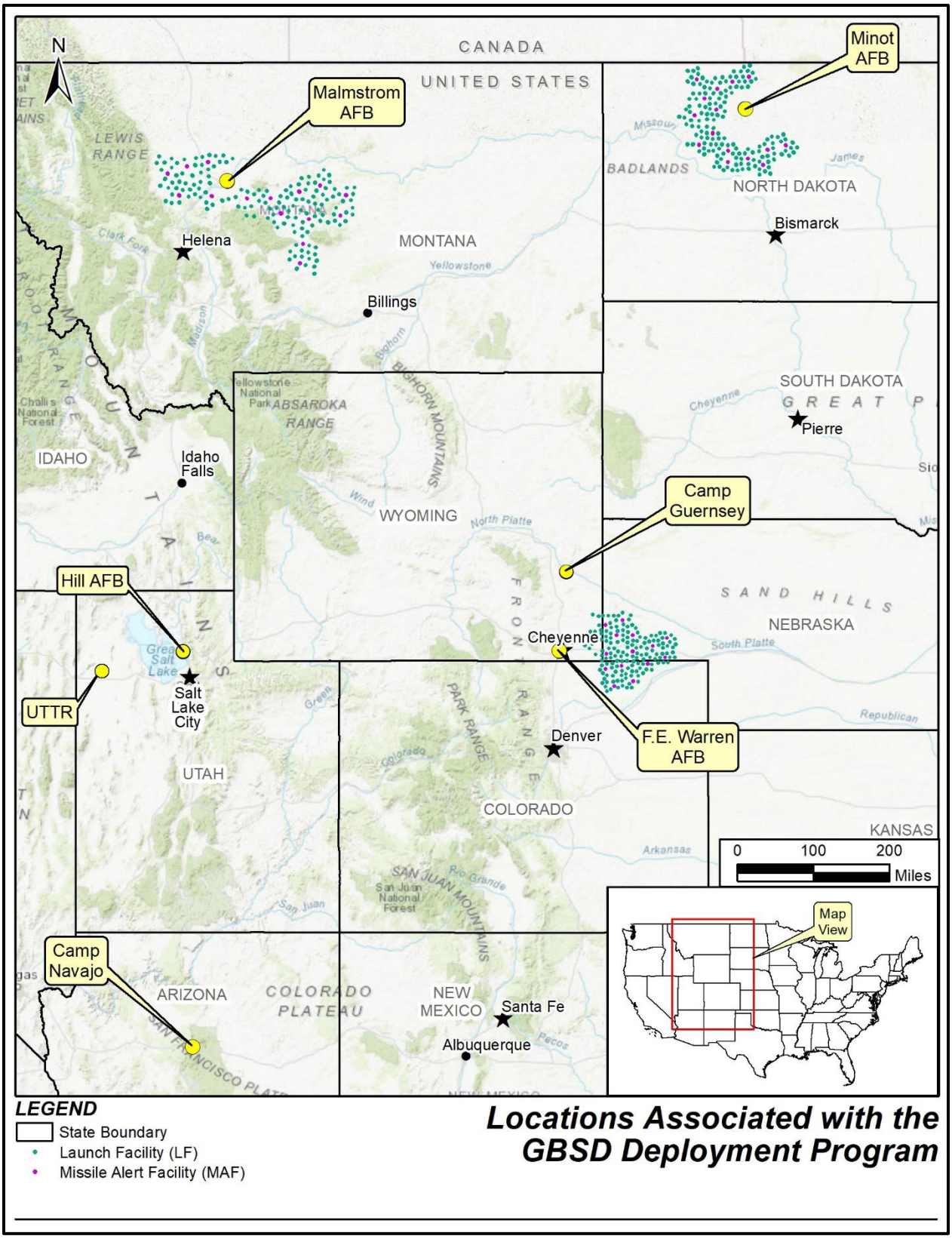
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Jaime Arsenault, THPO/NAGPRA


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Chairman Robert Flying Hawk
Yankton Sioux Tribe
Yankton Reservation
Box 1153, 800 Main Avenue SW
Wagner SD 57380

Dear Chairman Flying Hawk

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Decommissioning and disposal actions, including maintenance, training, storage, and support actions, would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. The Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage the Yankton Sioux Tribe throughout the development of the environmental analysis.

The Air Force is engaging early with federally recognized Native American Tribal governments as it formulates the Project and begins to define the Areas of Potential Effects (APEs). Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force would like to initiate government-to-government consultation with the interested Tribes regarding undertakings that will be identified for the Project and potential effects to properties or areas of religious, traditional, and cultural importance to your Tribe. The Air Force is contacting you to request that the Yankton Sioux Tribe enter into government-to-government consultation regarding the potential for the Project to effect properties or areas important to you.

The Air Force will be involving interested Tribes in multiple consultations as the Project is planned and then analyzed for its effects to cultural and Tribal resources. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of cultural and tribal resources, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of an on-the-ground cultural resources inventory of locations planned for construction, renovation, and demolition activities. In addition, the Air Force will consult with the Tribe regarding possible development of a Comprehensive Agreement under the Native American Graves Protection and Repatriation Act.

Additional opportunities for members of your Tribe to become more familiar with the Project will include Tribal scoping and public scoping currently planned to be conducted by the Air Force in the Fall of 2020. Also, the Air Force will provide for opportunities for Tribes to be included on cultural resource inventory field crews to provide their unique Tribal perspective on the identification and evaluation of historic properties that have religious, traditional, and cultural significance. Survey efforts are expected to occur in the late spring and summer of 2021.

The Air Force is also initiating consultation on the potential effects of the Project with other federally recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to “like new” condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to “like new” condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

Table 1. Project Components for Each Base

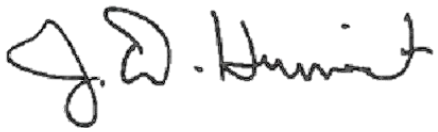
Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force looks forward to working with the Yankton Sioux Tribe throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

The Air Force would appreciate your Tribe's participation in government-to-government consultation for the GBSD Project. The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. Ms. Roxlau of Tetra Tech, the Air Force's consultant, will be following up with you to answer questions you may have, learn the best way to contact you and/or your representative so we can ensure you receive all Project-related communications, and determine your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

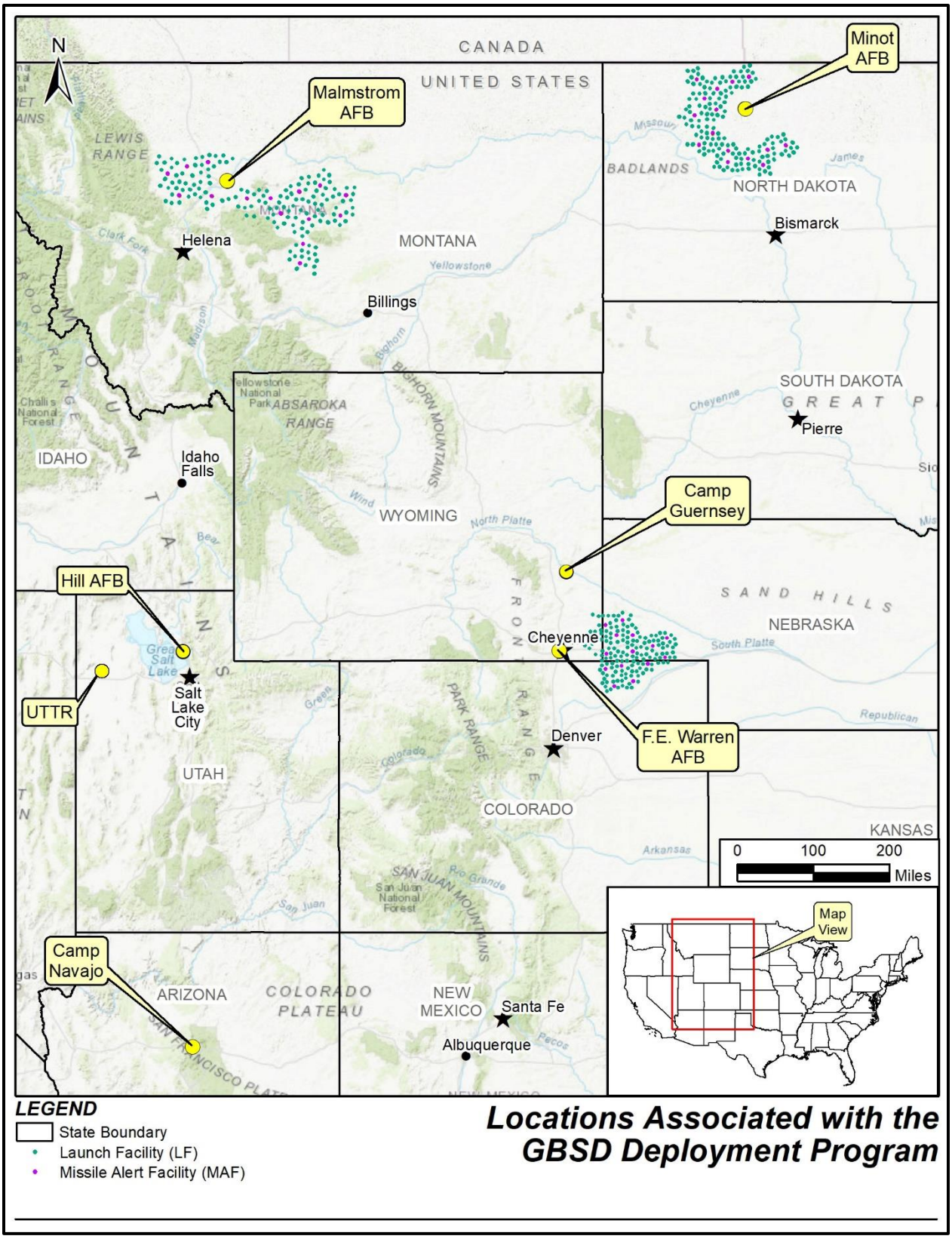
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
Air Force Global Strike Command
Site Activation Task Force Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Kip Spotted Eagle, THPO


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

Air Force Sentinel (Ground Based Strategic Deterrent) Project

MILLER, PAMELA K GS-13 USAF AFCEC AFCEE/CZOM <pamela.miller.7@us.af.mil>

Fri 8/5/2022 5:01 PM

To: mariea@nezperce.org <mariea@nezperce.org>

Cc: 2moon@nezperce.org <2moon@nezperce.org>;nakiaw@nezperce.org <nakiaw@nezperce.org>;keithb@nezperce.org <keithb@nezperce.org>;RUBIO, ALISON S GS-14 USAF AFMC AFCEC/CZTQ <alison.rubio@us.af.mil>;AUBUCHON, BENJAMIN L GS-13 USAF AFMC AFCEC/CZTQ <benjamin.aubuchon.1@us.af.mil>;OWENS, STEVEN M GS-12 USAF AFCEC AFCEE/CZOM <steven.owens.25@us.af.mil>;Sumner,Ray <Raymond.Sumner@colostate.edu>;j.javi.vasquez@colostate.edu <J.Javi.Vasquez@colostate.edu>;Childers, Jamie <JAMIE.CHILDERS@tetratech.com>;Cook, Jason1 <Jason.Cook2@tetratech.com>;Kaplan, Julie <Julie.Kaplan@tetratech.com>;BARTHOLOMEW, RUSSELL G GS-13 USAF AFMC AFNWC/NX <russell.bartholomew@us.af.mil>;KNIGHT, ROBERT N GS-13 USAF AFMC AFNWC/NXDX <robert.knight.33@us.af.mil>;NEWCOMER, STEPHANIE H GS-13 USAF AFMC AFCEC/CZN <stephanie.newcomer@us.af.mil>

1 attachments (8 MB)

Sentinel (GBSD) - Nez Perce Consultation Letter.pdf;

Chairman Penney

Greetings! Attached please find a letter and supporting documentation related to the Air Force's Sentinel (formerly Ground Based Strategic Deterrent or GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM Project. This letter and attachments have also been mailed to your office.

Through our environmental analysis and development of a Draft Programmatic Agreement (PA) for compliance with Section 106 of the National Historic Preservation Act, we have determined that portions of the Nez Perce (Nimíipuu or Nee-Me-Poo) National Historic Trail lie within the boundaries of the Project. As such, the Air Force would like to take this opportunity to offer government-to-government consultation with your Tribe regarding Project activities. This letter provides further details, maps, and a full Project presentation for your review and consideration, and we have included Nakia Williamson-Cloud, Cultural Resources Program Director, Keith (Pat) Baird, Tribal Historic Preservation Officer/Tribal Archaeologist, and Aaron Miles, Natural Resources Department Head, on this email as well.

I am the point of contact for the Cultural Resources and Tribal aspects of this Project. Please do not hesitate to contact me with questions or if you and your staff would like to set up a meeting (virtual or in-person) to further discuss the Project or the PA. We look forward to your response and to working with your Tribe!

Respectfully,

Pamela Miller, Sentinel (GBSD) AF Cultural Resources & Tribal Relations Lead

Archaeologist/Historian; Cultural Resources Media Manager
Midwest Branch/Peterson Installation Support Section
Air Force Civil Engineer Center (AFCEC)
Cell: 719.510.6773; pamela.miller.7@us.af.mil

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

4 August 2022

Beth A. Hart, GS-15, DAF
Division Chief, Site Activation Task Force (SATAF)
HQ AFGSC/A5F
Reply to: Tetra Tech, Inc.
ATTN: Sentinel (GBSD) Project
10306 Eaton Place
Fairfax, VA 22030

Mr. Samuel Penney, Chairman
Nez Perce Tribe
P.O. Box 305
Lapwai, Idaho 83340

Dear Chairman Penney

The United States Air Force has been engaged in planning efforts for the deployment of the Sentinel (formerly Ground Based Strategic Deterrent or GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The Sentinel weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would primarily occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Additional maintenance, training, storage, disposal, and support actions would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see the map at Attachment 1).

It has come to our attention that portions of the Nez Perce (Nimíipuu or Nee-Me-Poo) National Historic Trail (the Trail) lie within the Project area in the Malmstrom AFB missile field in Montana. Although the Trail is managed by the U.S. Forest Service of the U.S. Department of Agriculture, the Air Force would like to take this opportunity to offer government-to-government consultation with your Tribe regarding the Trail and other Project undertakings that may potentially have an effect on properties or areas of religious, traditional, and cultural importance to your Tribe. Attachment 2 shows the location of the Trail with respect to the Project area.

In accordance with the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force Global Strike Command, Air Force Nuclear Weapons Center, and Air Force Civil Engineer Center initiated government-to-government consultation with 60 identified federally-recognized Native American Tribal governments in May of 2020. Through continuing consultation, 54 of those Tribes have chosen to be consulting parties for the Project. Attachment 3, Tribal Consultation and Involvement, provides a brief outline of our consultation efforts to date.

Sentinel deployment activities would include completely replacing all Minuteman III ICBMs deployed in the continental United States with the Sentinel system, a technologically mature ICBM system. Sentinel would replace all components of the Minuteman III, including the three motor stages, interstages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the Sentinel system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the Sentinel systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged. The slide presentation in Attachment 4 provides additional details and graphics for your review.

The Air Force is in the process of working with 54 Tribes, 1 Tribal Historic Preservation Officer, 7 State Historic Preservation Officers, 9 cooperating Federal agencies, and numerous other consulting parties on a Programmatic Agreement (PA) for compliance with Section 106 of the NHPA for the entirety of the Project. Details regarding this consultation and the third Draft PA were included in the email transmission of this letter. A Comment Matrix accompanied the Draft PA, and we are respectfully requesting comments by September 9, 2022.

In addition, pursuant to the National Environmental Policy Act of 1969 (NEPA) (Title 42 *United States Code* § 4321); the Council on Environmental Quality regulations for implementing NEPA (Title 40 *Code of Federal Regulations* [CFR] Parts 1500–1508); and the Air Force Environmental Impact Analysis Process (EIAP) as codified in 32 CFR Part 989, the Air Force has prepared a Draft Environmental Impact Statement (EIS) for public review that analyzes the potential environmental consequences associated with the proposed deployment of the Sentinel ICBM decommissioning and disposal Project. The Notice of Availability for review and comment on the Draft EIS is included with this letter as Attachment 5. It provides information on where and how to review the Draft EIS, the public hearings schedule, and on how to submit comments on the Draft EIS.

Please let us know if you would like to engage in government-to-government consultation for the Sentinel Project. We will be happy to accommodate an in-person and/or virtual meeting to further discuss the Project, answer questions, or provide clarification. The point of contact for this effort is Ms. Pamela Miller, Air Force Cultural Resources and Tribal Relations Lead, who can be reached at (719) 510-6773 or pamela.miller.7@us.af.mil. The Air Force is looking forward to your response and to working with your Tribe. Thank you in advance for your assistance in this effort.

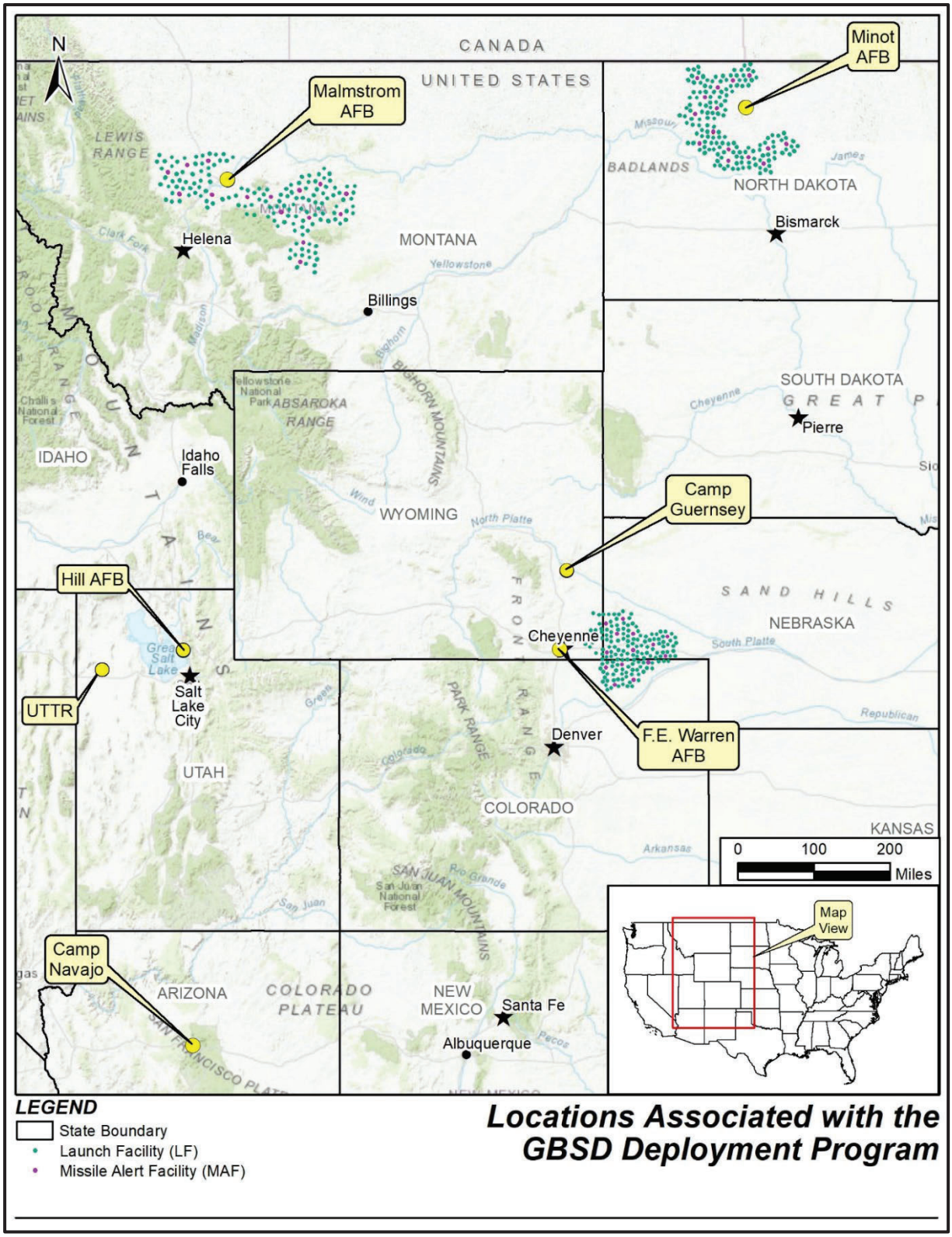
Sincerely

HART.BETH.A.1244107997
Digitally signed by HART.BETH.A.1244107997
Date: 2022.08.04 16:06:02 -05'00'

BETH A. HART, GS-15, DAF
Division Chief, Site Activation Task Force

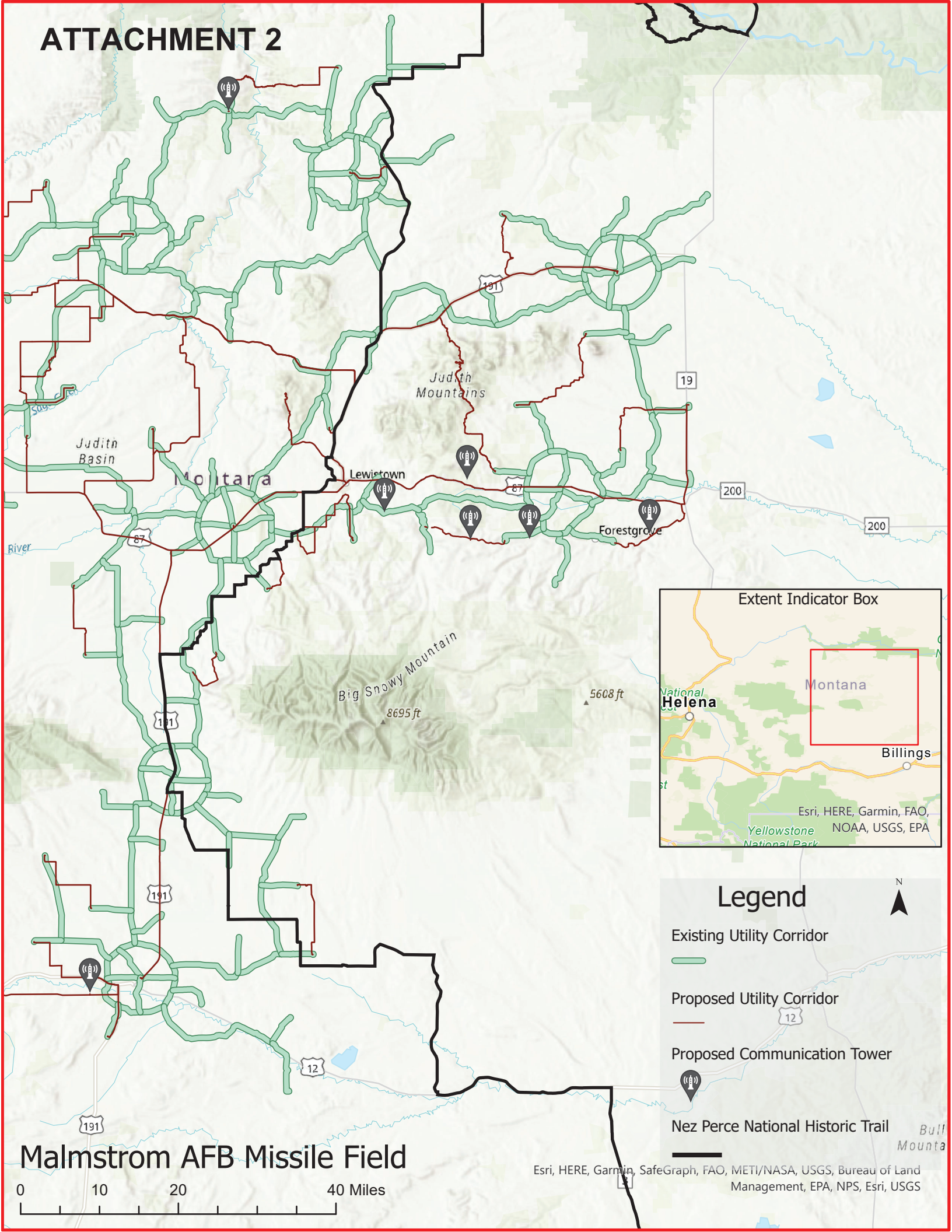
5 Attachments:
1. Map of Locations Associated with the Sentinel (GBSD) Deployment Program
2. Nez Perce National Historic Trail Location within the Project Area
3. Tribal Consultation and Involvement
4. Sentinel/GBSD Tribal Project Presentation
5. Draft EIS Notice of Availability

ATTACHMENT 1
PROJECT AREA MAP



ATTACHMENT 2
NEZ PERCE NATIONAL HISTORIC TRAIL LOCATION WITHIN THE PROJECT AREA

ATTACHMENT 2



Malmstrom AFB Missile Field

ATTACHMENT 3
TRIBAL CONSULTATION AND INVOLVEMENT

ENVIRONMENTAL IMPACT STATEMENT FOR THE SENTINEL/GROUND BASED STRATEGIC DETERRENT DEPLOYMENT AND MINUTEMAN III DECOMMISSIONING AND DISPOSAL

TRIBAL CONSULTATION AND INVOLVEMENT

Air Force Global Strike Command
Barksdale Air Force Base, Louisiana

Involved Tribes

Extensive consultation with 60 federally recognized Tribes is occurring under Sentinel/GBSD for both the Environmental Impact Statement (EIS) and National Historic Preservation Act Section 106 compliance processes. Of these Tribes, six have declined consultation, 38 have requested continuing consultation, and 16 have not yet responded. The Air Force continues to consult with all Tribes but the six who declined. A list of the 60 Tribes included in these compliance processes follows.

Sixty Federally Recognized Tribes	
Apache Tribe of Oklahoma	Northern Arapaho Tribe
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation	Northern Cheyenne Tribe
Blackfeet Tribe of the Blackfeet Indian Reservation	Northwestern Band of the Shoshone Nation
Bois Forte Band of Chippewa	Oglala Sioux Tribe
Cheyenne and Arapaho Tribes of Oklahoma	Paiute Indian Tribe of Utah
Cheyenne River Sioux Tribe	Pawnee Nation
Chippewa Cree Tribe of the Rocky Boy's Reservation	Prairie Island Indian Community
Comanche Nation of Oklahoma	Pueblo of Taos
Confederated Salish and Kootenai Tribes of the Flathead Reservation	Pueblo of Zuni
Confederated Tribes of the Goshute Reservation	Red Lake Band of Chippewa Indians
Crow Creek Sioux Tribe	Rosebud Sioux Tribe
Crow Tribe	San Juan Southern Paiute Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation	Santee Sioux Nation
Eastern Shoshone Tribe of the Wind River Reservation	Shakopee Mdewakanton Sioux Community
Ely Shoshone Tribe of Nevada	Shoshone-Bannock Tribes of the Fort Hall Reservation
Flandreau Santee Sioux Tribe	Shoshone-Paiute Tribes of the Duck Valley Reservation
Fond du Lac Band of Lake Superior Chippewa	Sisseton-Wahpeton Oyate
Fort Belknap Indian Community	Skull Valley Band of Goshute Indians
Fort Sill Apache Tribe	Southern Ute Indian Tribe
Grand Portage Band of Lake Superior Chippewa	Spirit Lake Nation
Hopi Tribe	Standing Rock Sioux Tribe
Jicarilla Apache Tribe	Te-Moak Tribe of Western Shoshone Indians
Kiowa Tribe	Te-Moak Tribe of Western Shoshone Indians -- Wells Band of Western Shoshone
Leech Lake Band of Ojibwe	Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Little Shell Tribe of Chippewa Indians	Turtle Mountain Band of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation	Upper Sioux Indian Community
Lower Sioux Indian Community	Ute Indian Tribe of the Uintah & Ouray Reservation
Mescalero Apache Tribe	Ute Mountain Ute Tribe
Mille Lacs Band of Ojibwe	White Earth Nation of Minnesota Chippewa
Navajo Nation	Yankton Sioux Tribe

Consultation Efforts

The Air Force maintains continuing communication with the Tribes through letters, emails, meetings, and telephone calls. These methods of consultation will continue throughout the life of the Sentinel/GBSD Deployment action (2036). Specific consultation efforts that have been conducted so far include:

- May 2020 – initiated consultation with all 60 Tribes.
- July 2020 – invited the Tribes to participate in virtual tribal scoping meetings regarding the EIS.
- August - October 2020 – conducted 13 virtual tribal scoping meetings.
- Scoping comments received from Tribes addressed these topics: the Proposed Action or alternatives, the NEPA process, cultural and historic resources, hazardous materials and waste, and health and safety.
- December 2020 – initiated consultation with the Tribes regarding the methods to be used to identify and evaluate cultural resources for the GBSD Project, for inclusion in Project cultural resources survey plans.
- January 2021 – conducted six virtual tribal meetings to discuss their concerns and input for the cultural resources survey plans.
- March 2021 – distributed draft survey plans to the Tribes for review and comment.
- April - June 2021 – conducted five virtual tribal meetings to discuss the Tribes' review of the draft survey plans and tribal participation in cultural resources identification efforts for the GBSD Project.
- July 2021 – provided information regarding opportunities for Tribes to participate in field research and surveys schedule for Fall 2021 and conducted two virtual tribal meetings to discuss.
- August 2021 – conducted field research visits to Malmstrom and Minot AFBs missile fields with tribal participation. The research visit to the F.E. Warren AFB missile field was delayed until Spring 2022, in consultation with the Tribes.
- September - October 2021 – conducted full Phase I field surveys of utility corridors located on lands administered by federal agencies within all three missile fields, with tribal participation.
- September - November 2021 – provided revised survey plans for the four installations.
- October 2021 – initiated the process to develop the GBSD Programmatic Agreement.
- November 2021 – conducted two virtual meetings with Tribes to discuss initiating development of the Programmatic Agreement. Invited the Tribes to four in-person meetings to be held in February-March 2022 to consult on the Programmatic Agreement.
- December 2021 to Present - development of the Programmatic Agreement that will commit how the Air Force will follow the Section 106 process for the Sentinel/GBSD Project.

ATTACHMENT 4
SENTINEL/GBSD TRIBAL PRESENTATION

Overview of Sentinel Deployment and Minuteman III Decommissioning and Disposal

(formerly Ground Based Strategic Deterrent - GBSD)

Project Proponents

- Air Force Global Strike Command, *Barksdale Air Force Base (AFB), LA*
  - GBSD Proponent
- Air Force Nuclear Weapons Center, *Kirtland AFB, NM*
  - GBSD Program Management
- GBSD Systems Directorate, *Hill AFB, UT*
  - GBSD NEPA Management and GBSD Deployment
- U.S. Army Space and Missile Defense Command, *Huntsville, AL*
  - Contract Management
- Air Force Civil Engineer Center, *San Antonio, TX*
  - NEPA and Cultural Resources Submit Matter Expertise

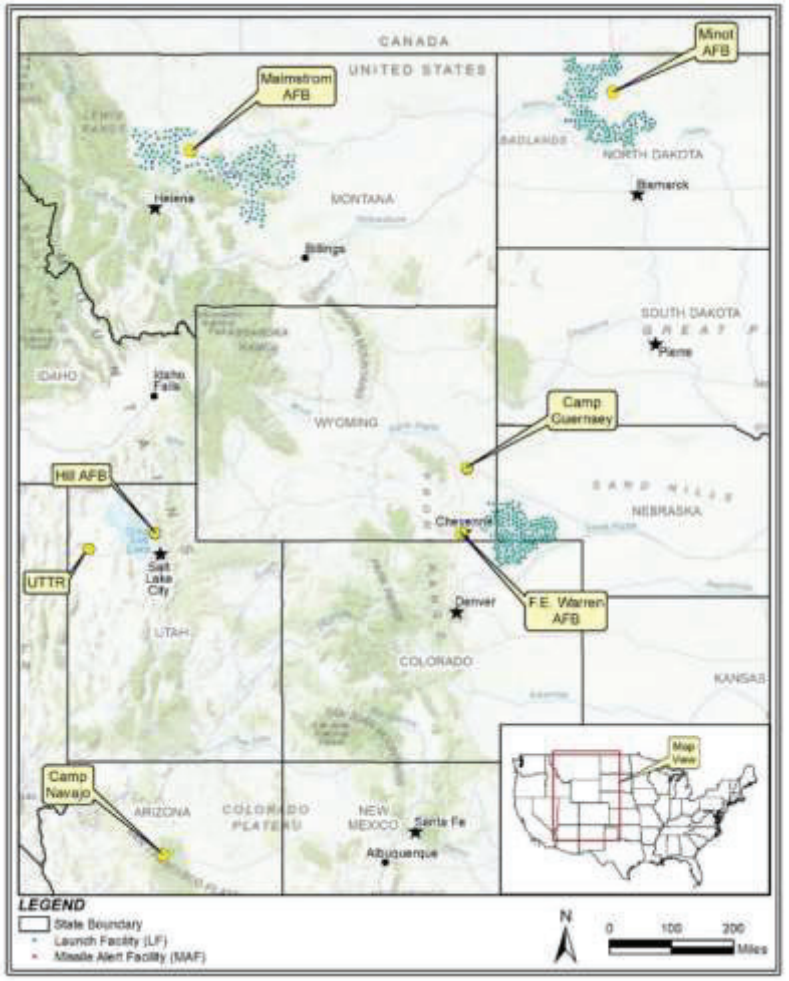
Sentinel Overview

- GBSD is the weapon system proposed to replace the aging Minuteman III ICBM system.
- It represents the modernization of the ground-based leg of the U.S. nuclear triad and would extend its capabilities through 2075.
- It is the most cost-effective option for maintaining the ground-based leg of the nuclear triad in a safe, secure, and effective manner.

Sentinel Locations

Deployment Locations
Francis E. Warren AFB, WY
Malmstrom AFB, MT
Minot AFB, ND

Support Locations
Hill AFB, UT
Utah Test and Training Range (UTTR), UT
Camp Guernsey, WY
Camp Navajo, AZ



Proposed Action

- **Off-base:** Replace all Minuteman III ICBMs deployed at F.E. Warren AFB, Malmstrom AFB, and Minot AFB, missile fields with the GBSD system; construct new and renovate existing utility corridors as needed; and construct communication towers.
- **On-base:** Construct or modify facilities and infrastructure as necessary to support GBSD maintenance, training, storage, testing, and support at F.E. Warren AFB, Malmstrom AFB, and Minot AFB, Hill AFB, UTTR, and Camp Guernsey.
- **Decommissioning and disposal:** Remove, decommission, and dispose of the Minuteman III weapons system at F.E. Warren AFB, Malmstrom AFB, Minot AFB, Hill AFB, UTTR, and Camp Navajo.

Proposed Action Elements at Each Installation

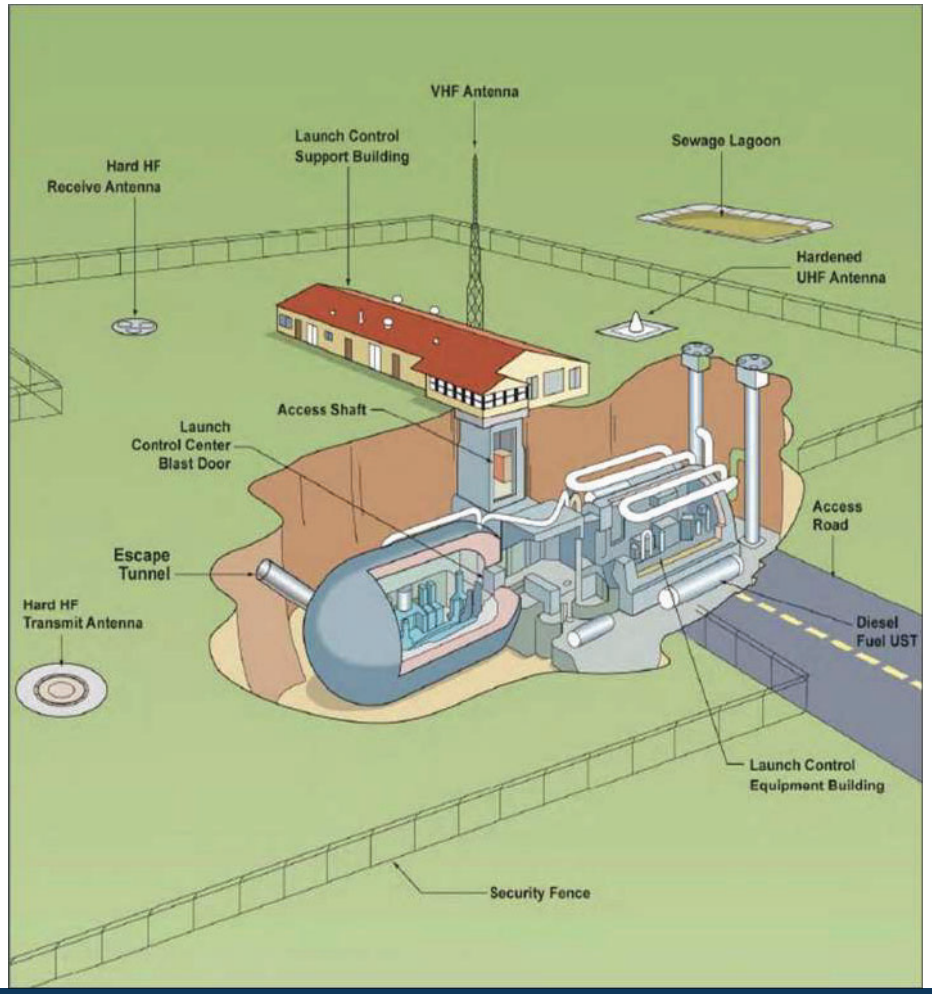
Location	On-base elements of the GBSD deployment	Off-base elements of the GBSD deployment	Decommissioning and disposal of the Minuteman III weapons system
F.E. Warren AFB	•	•	•
Malmstrom AFB	•	•	•
Minot AFB	•	•	•
Hill AFB	•		•
UTTR	•		•
Camp Guernsey	•		
Camp Navajo			•

Proposed Off-Base Actions

- Modernize missile alert facilities, launch facilities, and launch control centers in each missile field.
- Establish new utility corridors and communication towers in the missile fields to increase system redundancy.
- Upgrade existing utility corridors as needed.
- Establish temporary workforce hubs and centralized staging areas.
- Begin construction in the mid-2020s and complete it by the mid-2030s.

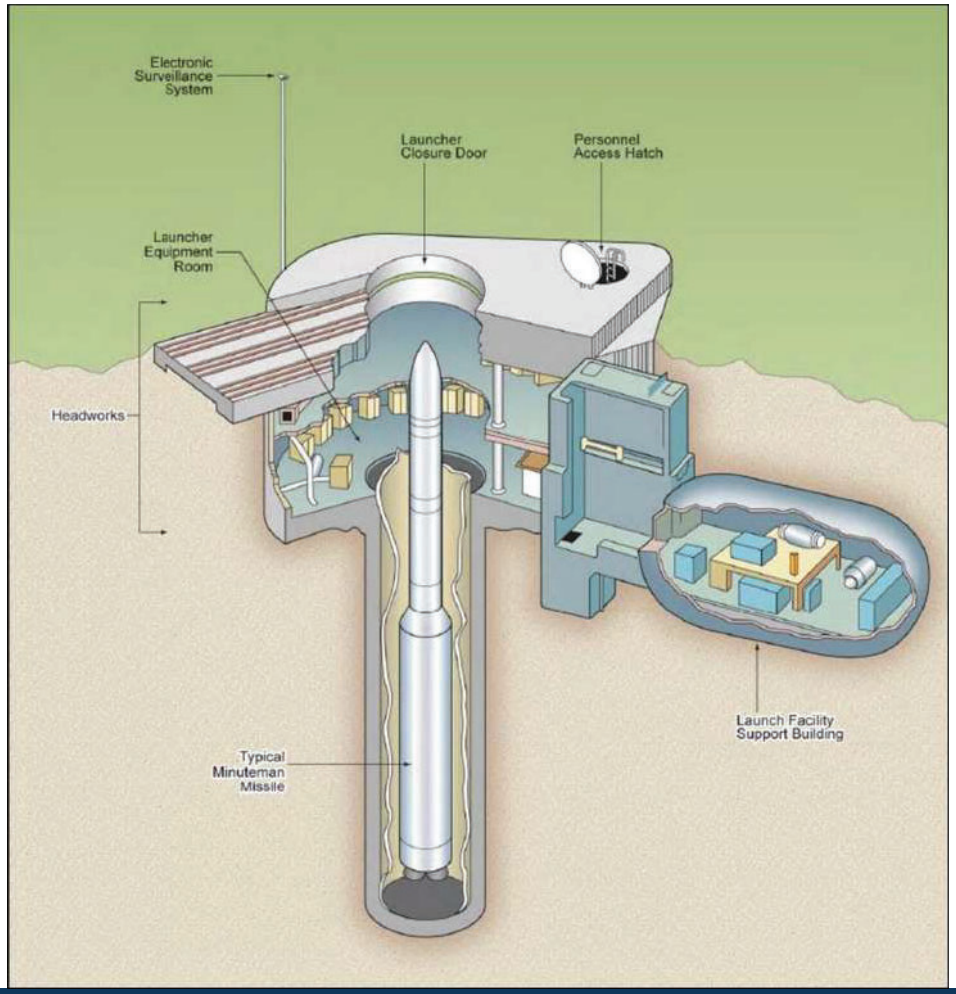
Missile Alert Facility and Launch Control Center

- 15 per missile field.
- Up to 8 per missile field would be made like new.
- Remainder would be decommissioned or repurposed.
- Configuration varies.



Launch Facility

- 150 per missile field.
- All would be made like new.
- Configuration varies.



Proposed Utility Corridors

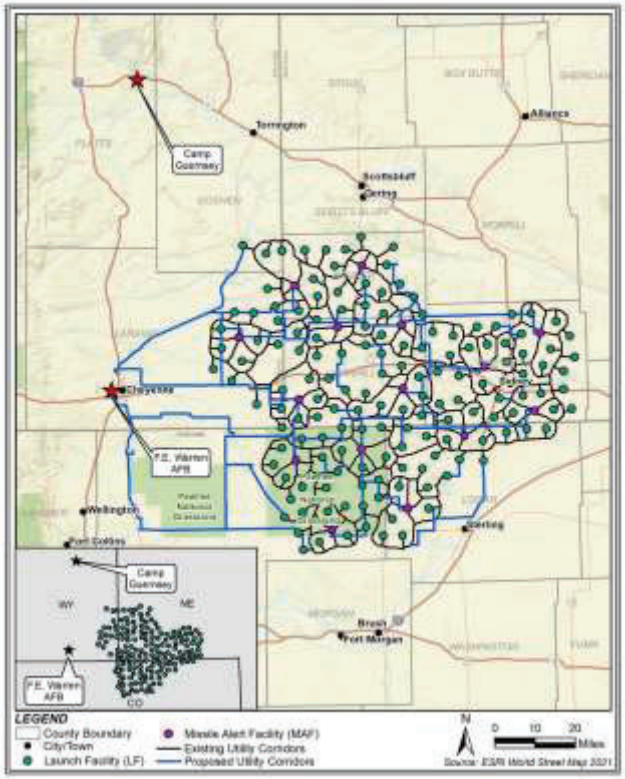
- The Project includes:

1) 3,100 miles of new utility corridor throughout the three missile fields
   - 900 miles at F.E. Warren AFB.
   - 1,250 miles at Malmstrom AFB.
   - 920 miles at Minot AFB.

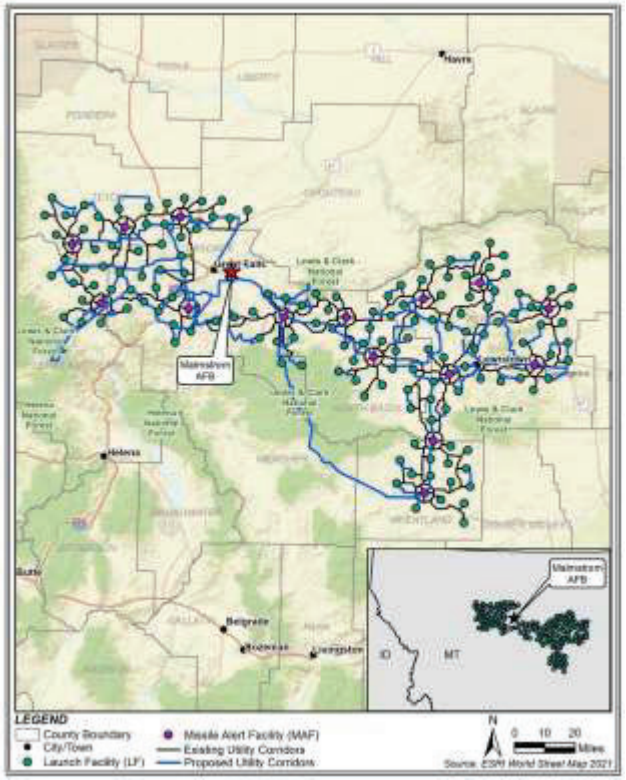
2) Installation of new utility components on existing aboveground infrastructure (e.g., existing utility poles) that currently follow the same routes as the proposed new utility corridors.

Proposed Utility Corridors (con't)

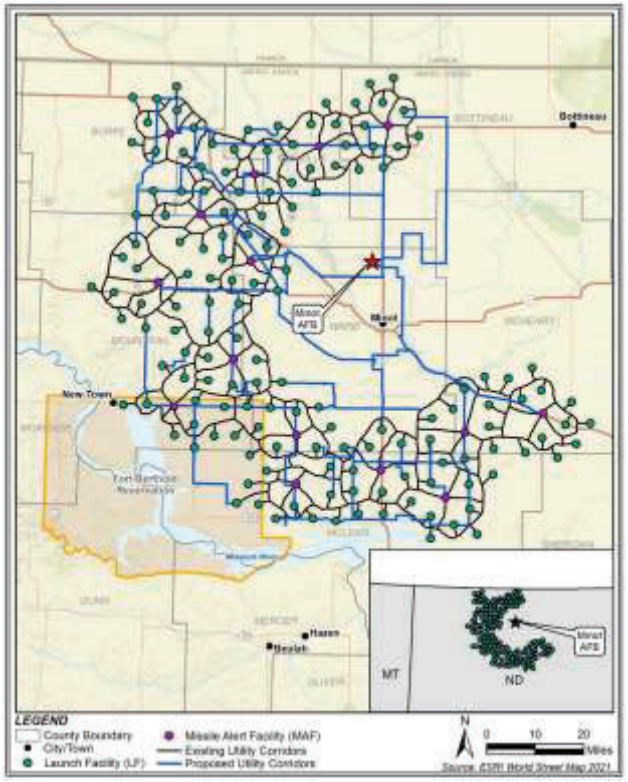
3) Removal, replacement, and addition of utility components to the existing utility corridors throughout the three missile fields, as needed.
   - 1,611 miles of existing corridor in the F.E. Warren AFB missile field.
   - 1,751 miles of existing corridor in the Malmstrom AFB missile field.
   - 1,531 miles of existing corridor in the Minot AFB missile field.
   - Activities would be the same as with the new utility corridors, including clearing and grubbing to provide access to the area; installation and maintenance of erosion control devices; trenching; and reseeding and restoration, as appropriate.



- Proposed Utility Corridor Actions at F.E. Warren AFB
  - 900 miles of new utility corridors
  - Work within 1,611 miles of existing utility corridors



- Proposed Utility Corridor Actions at Malmstrom AFB
  - 1,250 miles of new utility corridors
  - Work within 1,751 miles of existing utility corridors



- Proposed Utility Corridor Actions at Minot AFB
  - 920 miles of new utility corridors
  - Work within 1,531 miles of existing utility corridors

Utility Corridors

Agency	Proposed Action	
	New Corridors	Existing (MMIII)
Fort Berthold Indian Reservation	56.2 miles	88.0 miles
U.S. Forest Service	74.7 miles	55.2 miles
U.S. Fish and Wildlife Service	15.8 miles*	21.4 miles
Bureau of Land Management	18.7 miles	21.3 miles
Bureau of Reclamation	3.2 miles	5.3 miles
U.S. Army Corps of Engineers	2.1 miles	5.4 miles

*USFWS is owned property only. There are 86.6 miles in the Proposed Action and 147.8 miles in the Proposed Action affecting easements.

Proposed Utility Corridors Construction

- Air Force would employ a commonsense approach to utility corridor siting, including avoidance and minimization of impacts.
- Utility corridors would require trenching to a depth of 4–8 feet and approximately 2 feet wide.
- Directional drilling would be used where necessary, such as to install utility lines beneath roadways and stream crossings.

Proposed Communication Towers

- Approximately 62 communication towers would be constructed within the three missile fields (18 at F.E. Warren AFB, 31 at Malmstrom AFB, and 13 at Minot AFB).
- Towers would be either lattice structures or masts, would be 300 feet in height, and require guy wires.
- Tower sites would be approximately 5 acres in size and generally be located near existing roads and utilities.

Selection Criteria for Workforce Hubs and Staging Areas

Site Selection

- Coordinate with city and county officials before selecting sites
- Acquire permits as necessary to meet all local zoning requirements
- Comply fully with local planning requirements and plans
- Locate in areas without sensitive resources
- Established in accordance with the OSHA Section 1910.142, Subpart J – Temporary Labor Camps.
- Following construction facilities would be closed, removed, and restored

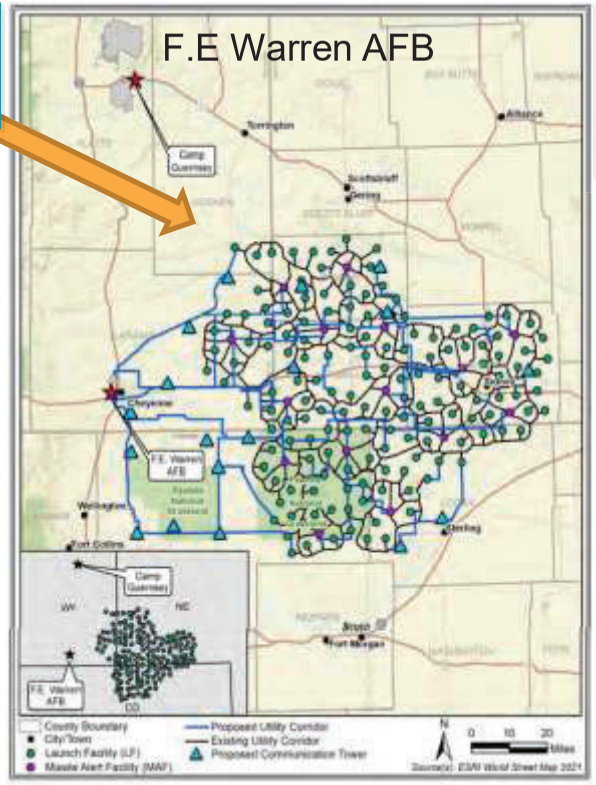
Personnel

- Prepare and maintain a site-specific Public Health and Safety Plan
- Conduct regular Public Health and Safety briefings
- Maintain and enforce written security policies and protocols
- Hire on-site security personnel, as necessary
- Background checks for all temporary construction workers
- Zero tolerance policies for noncompliance with local ordinances

Overview of Sentinel Deployment and Minuteman III Decommissioning and Disposal

Off-Base Construction

- 15 Missile Alert Facilities
- 150 Launch Facilities
- 18 Communication Towers
- 900 Miles of New and 1611 Miles of Existing Utility Corridors



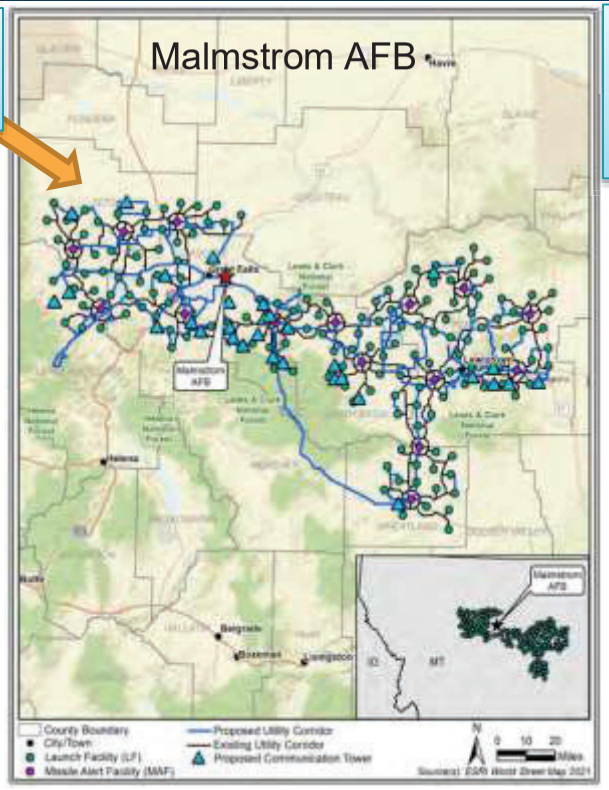
Temporary Workforce Hubs & Laydown Areas

- 1 workforce hub with 2,500 to 3,000 employees
  - Kimball, NE
- 4 laydown/ staging areas
  - Albin, WY
  - Kimball, NE
  - Sidney, NE
  - Stoneham, CO
- In place 3 to 5 years

Overview of Sentinel Deployment and Minuteman III Decommissioning and Disposal

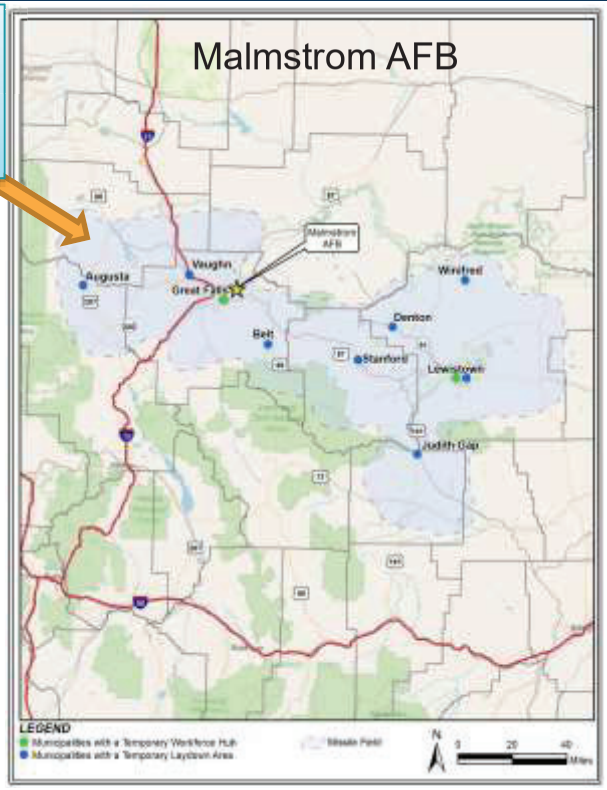
Off-Base Construction

- 15 Missile Alert Facilities
- 150 Launch Facilities
- 31 Communication Towers
- 1250 Miles of New and 1751 Miles of Existing Utility Corridors



Temporary Workforce Hubs & Laydown Areas

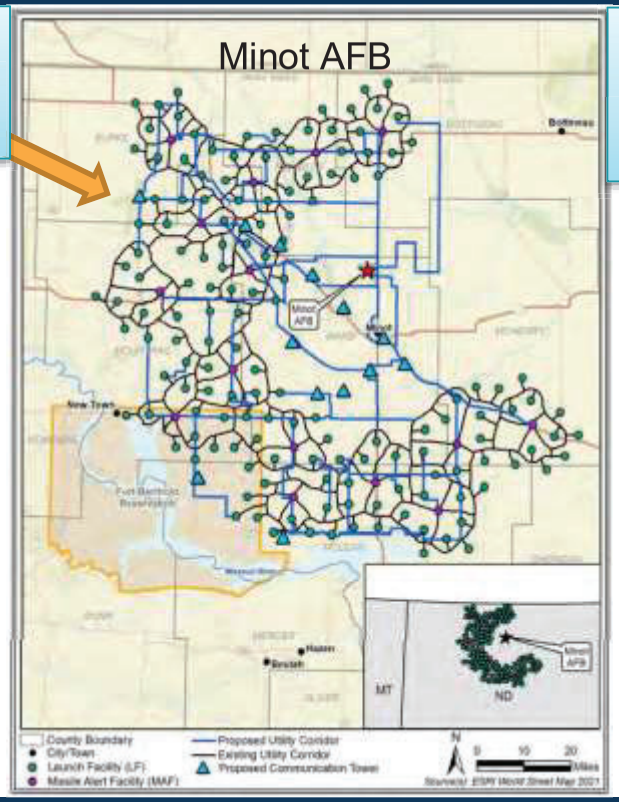
- 2 workforce hubs with 2,500 to 3,000 employees
  - Great Falls, MT
  - Lewistown, MT
- 8 laydown/staging areas
  - Augusta, MT
  - Vaughn, MT
  - Belt, MT
  - Stanford, MT
  - Denton, MT
  - Lewiston, MT
  - Judith Gap, MT
  - Winifred, MT
- In place 3 to 5 years



Overview of Sentinel Deployment and Minuteman III Decommissioning and Disposal

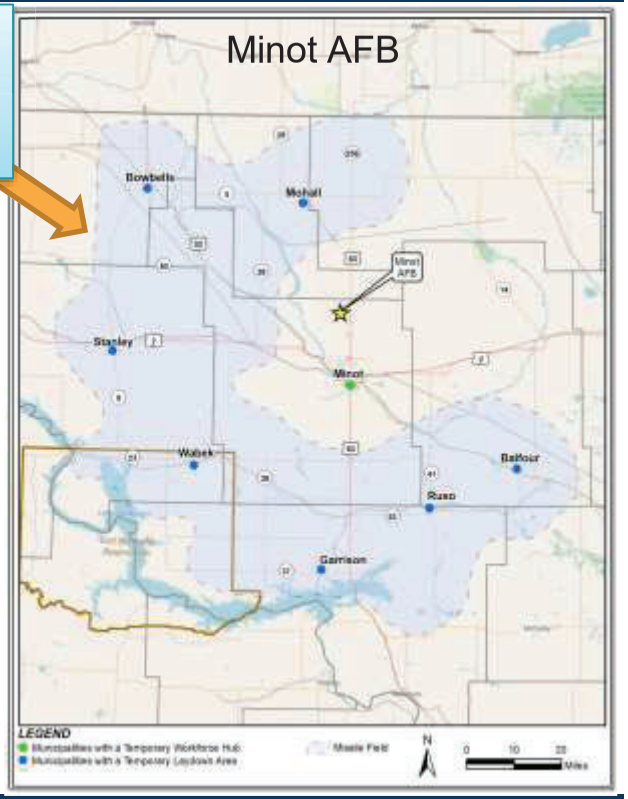
Off-Base Construction

- 15 Missile Alert Facilities
- 150 Launch Facilities
- 13 Communication Towers
- 920 Miles of New and 1531 Miles of Existing Utility Corridors



Temporary Workforce Hubs & Laydown Areas

- 1 workforce hub with 2,500 to 3,000 employees
  - Minot, ND
- 7 laydown/staging areas
  - Bowbells, ND
  - Mohall, ND
  - Stanley, ND
  - Wabek, ND
  - Garrison, ND
  - Ruso, ND
  - Balfour, ND
- In place 3 to 5 years

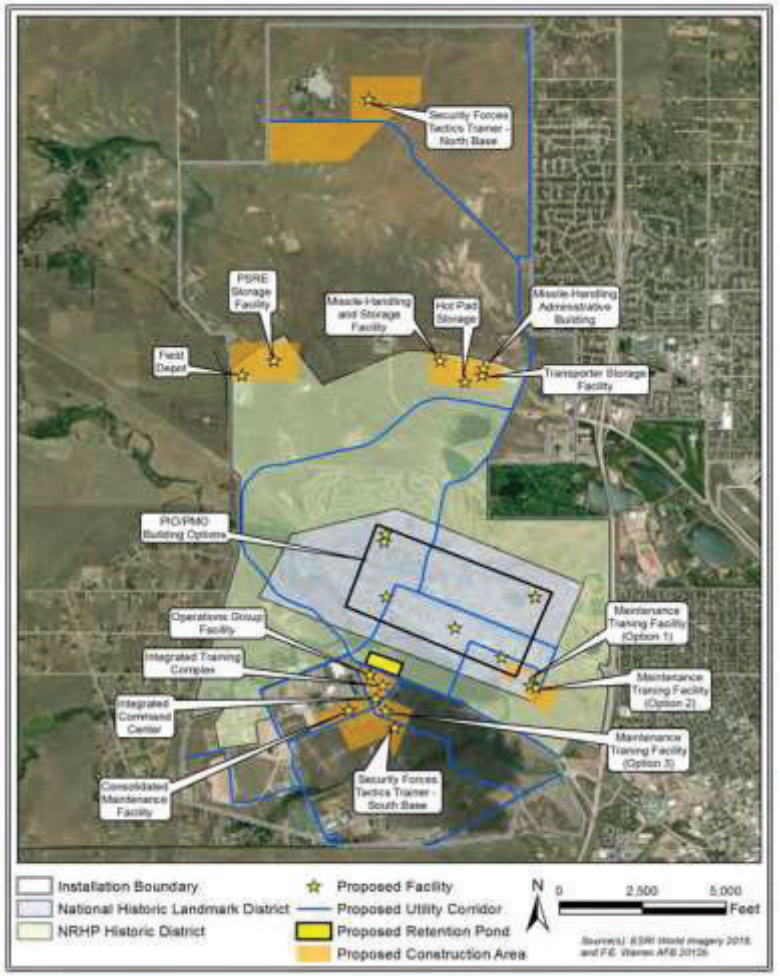


Proposed On-Base Actions

- Construct and modify on-base facilities and infrastructure as needed to support:
  - Sentinel command, communications, maintenance, training, and storage at F.E. Warren AFB, Malmstrom AFB, and Minot AFB.
  - Sentinel maintenance, training, storage, and testing facilities at Hill AFB, UTTR, and Camp Guernsey.

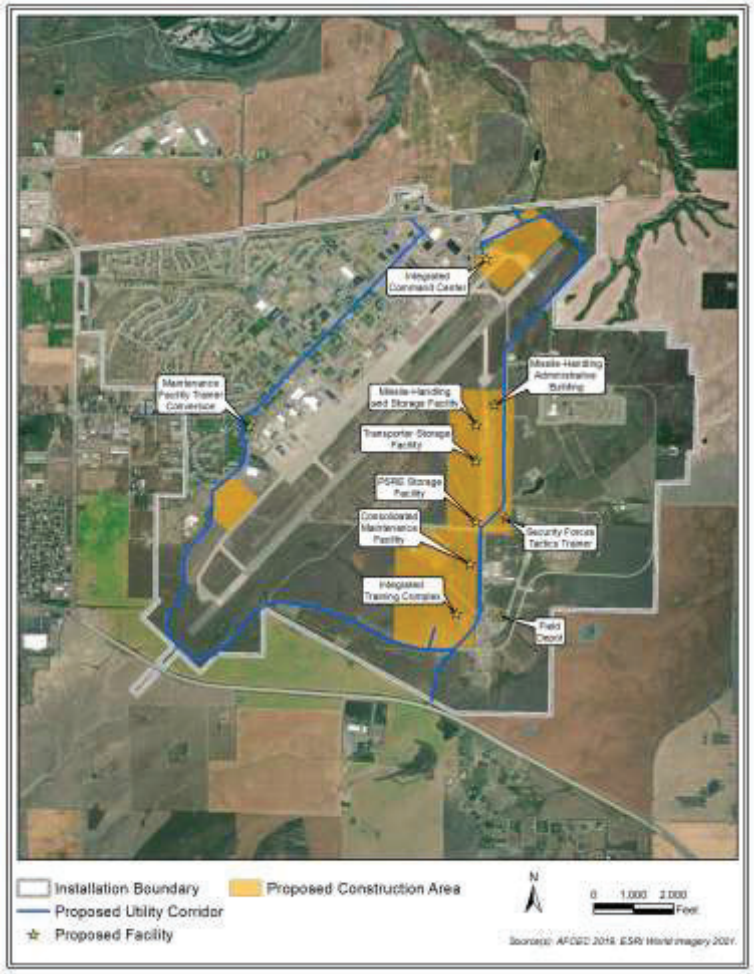
On-Base Construction at F.E. Warren AFB and Camp Guernsey

F.E. Warren is home to the 90th Missile Wing. On-base actions at F.E. Warren AFB and Camp Guernsey would include new construction and renovation to support GBSD command, communications, maintenance, training, and storage facilities.



On-Base Construction at Malmstrom AFB

Malmstrom AFB is home to the 341st Missile Wing. On-base actions at Malmstrom AFB would include new construction and renovation to support GBSD command, communications, maintenance, training, and storage facilities.



On-Base Construction at Minot AFB

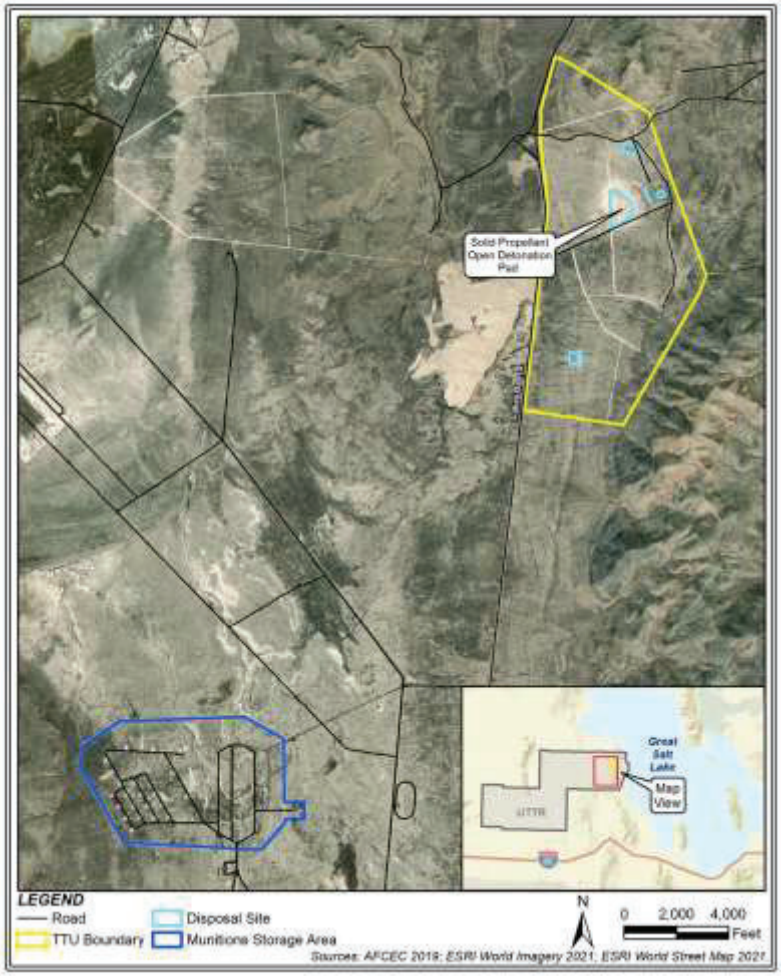
Minot AFB is home of the 91st Missile Wing. On-base actions at Minot AFB would include new construction and renovation to support GBSD command, communications, maintenance, training, and storage facilities.

On-Base Construction at Hill AFB

On-base actions at Hill AFB would include new construction and renovation to support GBSD maintenance, storage, and training support facilities.

On-Base Construction at UTTR

On-base actions at UTTR would include construction of new storage facilities at the Munitions Storage Area and disposal of Minuteman III missile components at UTTR's Thermal Treatment Unit (TTU).



Sentinel Consultation Efforts

- Consultation with Tribes, SHPOs, and other Federal Agencies began in May 2020
- Survey and Work Plans outlined standard methods for field work, identification and evaluation of sites, reporting, etc.
- Participation of Tribal Cultural Specialists (TCS)
- Development of GBSD Programmatic Agreement

Consulting Parties include:

7 SHPOs
1 THPO
54 Tribes
9 Federal Agencies
National Historic Landmarks and National Trials Programs
15 Other Consulting Parties

23 Tribal Nations Visited

2021 Survey and Investigation Activities

- Conducted biological and wetland surveys of 492 miles for new utility corridors (17% of total new corridors)
- Conducted field inspections of 1,648 miles of new utility corridors on non-federal lands
- Conducted 2 one-week fieldwork sessions for Traditional Cultural Specialists (TCSs) in the Malmstrom and Minot missile fields. Pre-survey field research, similar to Class I records search, to assist in the familiarization with the entirety of each missile field and enable the TCSs to conduct broader area inspections and gather data to discuss with their Tribe
- Conducted formal cultural resources survey and site recording with Tribal Cultural Specialists (TCSs) of project areas at all three missile fields that are located on lands controlled by other federal agencies

Overview of Sentinel Deployment and Minuteman III Decommissioning and Disposal

Malmstrom AFB Missile Field

528 acres surveyed Sept 15-20, 2021

- Utility corridors on Bureau of Land Management, Bureau of Reclamation, and Helena-Lewis and Clark National Forest
- Survey Team: 6 archaeologists and 11 Tribal Cultural Specialists from 5 Tribes (Blackfeet, Cheyenne River Sioux, Little Shell Chippewa, Northern Arapaho, and Rosebud Sioux)
- 37 sites and 7 isolated finds: included ditches, canals, dam, roads, railroads, homesteads, kilns, powerlines, dumps, trash scatters, prospecting trenches/pits, one identified Tribally significant property, rock cairns, possible burials, stone rings, culturally modified trees

Minot AFB Missile Field

301 acres surveyed Sept 29 – Oct 4, 2021

- Utility corridors on U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers.
- Survey Team: 6 archaeologists and 11 Tribal Cultural Specialists from 8 Tribes (Blackfeet, Cheyenne River Sioux, Fort Belknap Assiniboine and Gros Ventre, Little Shell Chippewa, Northern Arapaho, Oglala Sioux, Rosebud Sioux, and Standing Rock Sioux)
- 17 sites and 2 isolated finds: included a bridge, road, ramp, spillway, ditch, dam, parsonage, rock features and alignments, cairns, and lithic scatters

F.E. Warren AFB Missile Field

404 acres surveyed Oct 14-19, 2021

- Utility corridors on U.S. Forest Service as Pawnee National Grassland.
- Survey Team: 6 archaeologists and 11 Tribal Cultural Specialists from 8 Tribes (Blackfeet, Cheyenne River Sioux, Fort Belknap Assiniboine and Gros Ventre, Northern Arapaho, Oglala Sioux, Pawnee, Rosebud Sioux, and Standing Rock Sioux)
- 15 sites and 7 isolated finds: included homesteads, ditch, trash scatters, lithic scatters

Programmatic Agreement – Full Tribal Involvement

- Development of Sentinel Programmatic Agreement
  - 4 in-person meetings held in Feb/Mar 2022
  - Preliminary Draft PA with Recitals and Annotated Outline sent 29 Mar 2022 for 30 day review and comment period
  - 2 virtual meetings scheduled for 25 and 27 Apr 2022
  - Second Draft PA with Stipulations sent 1 Jun 2022 for 30 day review and comment period
  - 4 in-person meetings in June 2022
  - Third Draft PA scheduled to be sent to all consulting parties on 5 August 2022

Initial in-person meetings included:
18 Tribal Nations
6 SHPO Offices
1 THPO Office
5 Federal Agencies
4 Other Consulting Parties
Air Force personnel
Contractor support

Tribal EIS Briefings held on 6 and 13 June 2022 (virtual)

Establishing Tribal Consultation Protocols for the PA

- Federal recognition of Nation-to-Nation consultation requirements and Tribal knowledge/expertise
- ACHP Guidance and Information Papers Related to Federal-Tribal Coordination
- Procedural Protocols - The basic tenets within which Tribal consultation shall be initiated and conducted
- Cultural Understanding Protocols - Achieving meaningful and effective Tribal consultation
- Behavioral Protocols - Effective and respectful communication and contributions

Programmatic Agreement Development Schedule

Proposed Schedule:

- November 2021 – virtual meetings
- February 2022 – in-person meetings
- March 2022 – distribute Preliminary Draft PA (recitals and annotated outline)
- April 2022 – virtual meetings
- June 2022 – distribute 2nd Draft PA
- June/July 2022 – in-person meetings
- August 2022 – distribute 3rd Draft PA
- September 2022 – virtual meetings
- November 2022 – distribute Final PA for signatures
- December 2022 – acquire ACHP signature

Thank You

ATTACHMENT 5
DRAFT ENVIRONMENTAL IMPACT STATEMENT
NOTICE OF AVAILABLITY

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

July 1, 2022

Howard N. Kosht, GS-15, DAF
Reply to: GBSD Project EIS
10306 Eaton Place, Suite 340
Fairfax, VA 22030

Dear Stakeholder

Pursuant to the National Environmental Policy Act of 1969 (NEPA) (Title 42 *United States Code* § 4321); the Council on Environmental Quality regulations for implementing NEPA (Title 40 *Code of Federal Regulations* [CFR] Parts 1500–1508); and the Air Force Environmental Impact Analysis Process (EIAP) as codified in 32 CFR Part 989, the Air Force has prepared a Draft Environmental Impact Statement (EIS) for public review that analyzes the potential environmental consequences associated with the proposed deployment of the Ground Based Strategic Deterrent (GBSD) Intercontinental Ballistic Missile (ICBM) weapons system, called Sentinel, and decommissioning and disposal of the aging Minuteman III ICBM weapons system. The Bureau of Indian Affairs, Bureau of Land Management, Bureau of Reclamation, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, U.S. Forest Service, and Wyoming Army National Guard are cooperating agencies for the EIS.

The purpose of the Proposed Action is to replace all land-based Minuteman III missiles deployed in the continental U.S. with the technologically advanced GBSD system. The Proposed Action is needed to meet national security requirements and to comply with the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Publ. L. 115-232 § 1663, 132 Stat. 2153), which directs the Air Force to develop and implement a strategy "to accelerate the development, procurement, and fielding of the ground based strategic deterrent program."

In addition to replacing all land-based Minuteman III ICBMs with the GBSD ICBMs, all launch facilities, communication systems, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. Decommissioning and disposal activities would include destruction of all Minuteman III weapon systems and associated components to prevent their further use for their originally intended purpose. While certain components and subsystems of the Minuteman III have been upgraded, most of the fundamental infrastructure used today is the nearly 50-year-old original equipment. The Proposed Action would not include generating or disposing of nuclear material, and the number of land-based nuclear missiles would remain unchanged. The nuclear warheads from the Minuteman III system would be used for the GBSD system. Deployment of the GBSD system would begin in the mid-2020s, extending the capabilities of the land-based leg of the U.S. nuclear triad through at least 2075.

Both on- and off-base construction and operational activities would take place at Francis E. Warren (F.E.) Air Force Base (AFB), WY, Malmstrom AFB, MT, and Minot AFB, ND, and throughout the missile fields. Additional construction, maintenance, training, storage, testing, support, decommissioning, and disposal actions would occur at Hill AFB, UT; the Utah Test and Training Range, UT; Camp Guernsey, WY; and Camp Navajo, AZ. Deployment of the GBSD system would begin in 2023 at F.E. Warren AFB, and be implemented at Malmstrom AFB and Minot AFB over the next 15 years. The proposed GBSD deployment activities would include the construction and renovation of

approximately 1,569,000 square feet of on-base facilities, and the refurbishment of all 450 launch facilities and 45 missile alert facilities, construction of 62 new communication towers on newly acquired properties, the establishment of approximately 3,100 miles of new utility corridors, and the potential to conduct utility work within the nearly 5,000 miles of existing utility easements throughout the missile fields of F.E. Warren, Malmstrom, and Minot AFBs. During construction, a workforce hub would be established in or near Great Falls and Lewistown, MT, Kimball, NE, and Minot, ND, housing up to 3,000 temporary workers and support personnel each, and 19 centralized construction laydown areas would be established in or near Stoneham, CO; Augusta, Belt, Denton, Judith Gap, Lewistown, Stanford, Vaughn, and Winifred, MT; Kimball and Sydney, NE; Balfour, Bowbells, Garrison, Mohall, Ruso, Stanley, and Wabek, ND; and Albin, WY. While there would be no construction at Camp Navajo, the proposed GBSD deployment activities would include use of the existing missile storage area during Minuteman III decommissioning and disposal activities.

The EIS evaluates two alternatives to the Proposed Action, the Reduced Utility Corridors Alternative and the No Action Alternative (as required by NEPA). The Reduced Utility Corridors Alternative would replace all land-based Minuteman III ICBMs deployed in the continental United States with GBSD ICBMs, as would the Proposed Action. And, while it includes most of the elements of the Proposed Action, it also proposes establishing appreciably fewer miles of new utility corridors and reutilizing marginally fewer miles of existing utility corridors. Under the No Action Alternative, the Air Force would continue to maintain and operate the Minuteman III weapon system in its current configuration, and the GBSD weapon system would not be deployed.

The public comment period for the GBSD EIS begins with publication of the Notice of Availability (NOA) in the *Federal Register* on or about July 1, 2022. Advertisements will be published in local newspapers notifying the public of the EIS comment period and the 7 regional in-person and 2 virtual public hearings. See the included flyer for additional information on the hearings and how to obtain or where to review the Draft EIS. The Draft EIS and all materials that will be presented at the public hearings are available for review on the project website at www.gbsdeis.com. On the website, you will find information about the locations and registration procedures for all public hearings. The website will become accessible the day the NOA is published.

To ensure a thorough review of the analysis in the Draft EIS, the Air Force is soliciting comments from interested local, state, and federal agencies and organizations; Native American Tribes; and members of the public. Comments on the Draft EIS may be submitted in a variety of ways to include orally at the in-person and virtual public hearings or in writing at in-person public hearings, through the project website at www.gbsdeis.com; via email to gbsdeis@tetratech.com; or by mail to: GBSD Project EIS, 10306 Eaton Place, Suite 340, Fairfax, VA, 22030. The Air Force requests that comments on the Draft EIS be submitted within 45 days of the publication of the NOA to ensure they are considered by the Air Force for the Final EIS. If you are unable to access the website or would like to request printed or digital copies of materials, please send an email to gbsdeis@tetratech.com.

Sincerely

HOWARD N. KOSHT, GS-15, DAF
Executive Director, Strategic Plans, Programs, and Requirements

Public Hearings and Providing Comments on the
Draft Environmental Impact Statement for the Proposed Ground Based
Strategic Deterrent Deployment and Minuteman III Decommissioning and Disposal

The public is invited to review and comment on the Air Force's Draft Environmental Impact Statement (EIS) for the proposed Ground Based Strategic Deterrent (GBSD) Deployment and Minuteman III Decommissioning and Disposal.

Where to Obtain the Draft EIS

The Draft EIS is available for review and download at www.gbsdeis.com. An electronic copy may be requested by calling (307) 773-3400 or emailing gbsdeis@tetratech.com. It may also be reviewed at the at the following public libraries:

Fort Berthold Library	Minot Public Library	Kimball Public Library	Laramie County Library	Great Falls Public Library	Lewistown Public Library
220 8th Ave E New Town, ND 58763	516 2nd St Ave SW Minot, ND 58701	208 S Walnut St. Kimball, NE 69145	2200 Pioneer Ave. Cheyenne, WY 82001	301 2nd Ave. N Great Falls, MT 59401	701 W Main St. Lewistown, MT 59457

Public Hearing Information

The Air Force is holding two virtual and seven regionally-based in-person public hearings to provide information about the proposed project and to accept comments on the draft EIS. All members of the public are encouraged to attend as your input will assist the Air Force in making more informed decisions. The public hearings will include (1) opening remarks by Air Force Global Strike Command (AFGSC); (2) a pre-recorded presentation outlining the scope of the proposed GBSD project and the findings of the Draft EIS; and (3) an opportunity for attendees to provide oral and/or written comments. The presentation at in-person hearings will begin 30 minutes after the start time, formal public testimony will begin approximately one hour later, and the hearing venue will close 3 hours after the start time. Oral comments will be limited to 3 minutes for all public hearings. Comments of considerable length can be submitted in writing through the project website, via email, or through the US mail (see Public Comment section below).

Regional In-Person Public Hearings

Jul 19, 2022	5:30-8:30pm CT	Three Affiliated Tribes Pow Wow Grounds, New Town, ND
Jul 21, 2022	5:30-8:30pm CT	Minot Municipal Auditorium (Old Armory Rm), 430 3rd Ave. SW, Minot, ND 58701
Jul 26, 2022	5:30-8:30pm MT	Mansfield Ctr for Performing Arts (Missouri Rm), 2 Park Drive S, Great Falls, MT 59401
Jul 28, 2022	3:00-6:00pm MT	Fergus County Fairgrounds, 153 Fairgrounds Road, Lewistown, MT 59457
Aug 2, 2022	5:30-8:30pm MT	Kimball Jr/Sr High School, 901 S Nadine St, Kimball, NE, 69145
Aug 3, 2022	5:30-8:30pm MT	Prairie High School, 42315 Wcr 133, New Raymer, Colorado 80742
Aug 4, 2022	5:30-8:30pm MT	ANB Bank Leadership Center, 1400 E College Drive, Cheyenne, WY 82007

Virtual Public Hearings

Aug 8, 2022 5:30-8:30pm CT
Aug 9, 2022 5:30-8:30pm MT

REGISTRATION REQUIRED
at www.gbsdeis.com

- All public hearing materials are available at www.gbsdeis.com.
- Hearings may adjourn before 8:30, if all oral comments have been provided.

To request accommodation to access the print and audio presentation, ask for help making a comment (per the Americans with Disabilities Act), or if you need assistance attending via phone due to lack of internet availability, please call AFGSC Public Affairs at (307) 773-3400 no later than August 1, 2022.

Public Comments

In addition to providing comments on the Draft EIS during the public hearings, written comments can be submitted through the project website at www.gbsdeis.com; via email to gbsdeis@tetratech.com; or by US mail to: GBSD EIS, 10306 Eaton Place, Suite 340, Fairfax, VA, 22030.

Comments will be accepted at any time during the environmental review process. However, oral comments provided at the public hearings and written comments received by August 15, 2022, will be considered in the preparation of the Final EIS.

Air Force Sentinel (Ground Based Strategic Deterrent) Project

MILLER, PAMELA K GS-13 USAF AFCEC AFCEE/CZOM <pamela.miller.7@us.af.mil>

Wed 8/10/2022 4:43 PM

To: Neeka.somday@colvilletribes.com <Neeka.somday@colvilletribes.com>

Cc: guy.moura@colvilletribes.com <guy.moura@colvilletribes.com>;Jon.Meyer@colvilletribes.com <Jon.Meyer@colvilletribes.com>;RUBIO, ALISON S GS-14 USAF AFMC AFCEC/CZTQ <alison.rubio@us.af.mil>;AUBUCHON, BENJAMIN L GS-13 USAF AFMC AFCEC/CZTQ <benjamin.aubuchon.1@us.af.mil>;OWENS, STEVEN M GS-12 USAF AFCEC AFCEE/CZOM <steven.owens.25@us.af.mil>;Sumner,Ray <Raymond.Sumner@colostate.edu>;j.javi.vasquez@colostate.edu <J.Javi.Vasquez@colostate.edu>;BARTHOLOMEW, RUSSELL G GS-13 USAF AFMC AFNWC/NX <russell.bartholomew@us.af.mil>;KNIGHT, ROBERT N GS-13 USAF AFMC AFNWC/NXDX <robert.knight.33@us.af.mil>;NEWCOMER, STEPHANIE H GS-13 USAF AFMC AFCEC/CZN <stephanie.newcomer@us.af.mil>;Childers, Jamie <JAMIE.CHILDERS@tetratech.com>;Cook, Jason1 <Jason.Cook2@tetratech.com>;Kaplan, Julie <Julie.Kaplan@tetratech.com>

1 attachments (2 MB)

Sentinel (GBSD) - Colville Tribes Consultation Letter .pdf;

Chairman Erickson

Greetings! Attached please find a letter and supporting documentation related to the Air Force's Sentinel (formerly Ground Based Strategic Deterrent or GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM Project. This letter and attachments have also been mailed to your office.

Through our environmental analysis and development of a Draft Programmatic Agreement (PA) for compliance with Section 106 of the National Historic Preservation Act, we have determined that portions of the Nez Perce (Nimíipuu or Nee-Me-Poo) National Historic Trail lie within the boundaries of the Project. As such, the Air Force would like to take this opportunity to offer government-to-government consultation with your Tribe regarding Project activities. This letter provides further details, maps, and a full Project presentation for your review and consideration, and we have included Guy Moura, Tribal Historic Preservation Officer, and Jon Meyer, Cultural Resources, on this email as well.

I am the point of contact for the Cultural Resources and Tribal aspects of this Project. Please do not hesitate to contact me with questions or if you and your staff would like to set up a meeting (virtual or in-person) to further discuss the Project or the PA. We look forward to your response and to working with your Tribe!

Respectfully,

Pamela Miller, Sentinel (GBSD) AF Cultural Resources & Tribal Relations Lead Archaeologist/Historian; Cultural Resources Media Manager

Midwest Branch/Peterson Installation Support Section
Air Force Civil Engineer Center (AFCEC)
Cell: 719.510.6773; pamela.miller.7@us.af.mil

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

10 August 2022

Beth A. Hart, GS-15, DAF
Division Chief, Site Activation Task Force (SATAF)
HQ AFGSC/A5F
Reply to: Tetra Tech, Inc.
ATTN: Sentinel (GBSD) Project
10306 Eaton Place
Fairfax, VA 22030

Mr. Jarred-Michael Erickson
Chairman, Confederated Tribes of the Colville Reservation
21 Colville Street
Nespelem, WA 99155

Dear Chairman Erickson

The United States Air Force has been engaged in planning efforts for the deployment of the Sentinel (formerly Ground Based Strategic Deterrent or GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The Sentinel weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would primarily occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Additional maintenance, training, storage, disposal, and support actions would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see the map at Attachment 1).

It has come to our attention that portions of the Nez Perce (Nimíipuu or Nee-Me-Poo) National Historic Trail (the Trail) lie within the Project area in the Malmstrom AFB missile field in Montana. Although the Trail is managed by the U.S. Forest Service of the U.S. Department of Agriculture, the Air Force would like to take this opportunity to offer government-to-government consultation with your Tribe regarding the Trail and other Project undertakings that may potentially have an effect on properties or areas of religious, traditional, and cultural importance to your Tribe. Attachment 2 shows the location of the Trail with respect to the Project area.

In accordance with the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force Global Strike Command, Air Force Nuclear Weapons Center, and Air Force Civil Engineer Center initiated government-to-government consultation with 60 identified federally-recognized Native American Tribal governments in May of 2020. Through continuing consultation, 54 of those Tribes have chosen to be consulting parties for the Project. Attachment 3, Tribal Consultation and Involvement, provides a brief outline of our consultation efforts to date.

Sentinel deployment activities would include completely replacing all Minuteman III ICBMs deployed in the continental United States with the Sentinel system, a technologically mature ICBM system. Sentinel would replace all components of the Minuteman III, including the three motor stages, interstages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the Sentinel system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the Sentinel systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged. The slide presentation in Attachment 4 provides additional details and graphics for your review.

The Air Force is in the process of working with 54 Tribes, 1 Tribal Historic Preservation Officer, 7 State Historic Preservation Officers, 9 cooperating Federal agencies, and numerous other consulting parties on a Programmatic Agreement (PA) for compliance with Section 106 of the NHPA for the entirety of the Project. Details regarding this consultation and the third Draft PA were included in the email transmission of this letter. A Comment Matrix accompanied the Draft PA, and we are respectfully requesting comments by September 9, 2022.

In addition, pursuant to the National Environmental Policy Act of 1969 (NEPA) (Title 42 *United States Code* § 4321); the Council on Environmental Quality regulations for implementing NEPA (Title 40 *Code of Federal Regulations* [CFR] Parts 1500–1508); and the Air Force Environmental Impact Analysis Process (EIAP) as codified in 32 CFR Part 989, the Air Force has prepared a Draft Environmental Impact Statement (EIS) for public review that analyzes the potential environmental consequences associated with the proposed deployment of the Sentinel ICBM decommissioning and disposal Project. The Notice of Availability for review and comment on the Draft EIS is included with this letter as Attachment 5. It provides information on where and how to review the Draft EIS, the public hearings schedule, and on how to submit comments on the Draft EIS.

Please let us know if you would like to engage in government-to-government consultation for the Sentinel Project. We will be happy to accommodate an in-person and/or virtual meeting to further discuss the Project, answer questions, or provide clarification. The point of contact for this effort is Ms. Pamela Miller, Air Force Cultural Resources and Tribal Relations Lead, who can be reached at (719) 510-6773 or pamela.miller.7@us.af.mil. The Air Force is looking forward to your response and to working with your Tribe. Thank you in advance for your assistance in this effort.

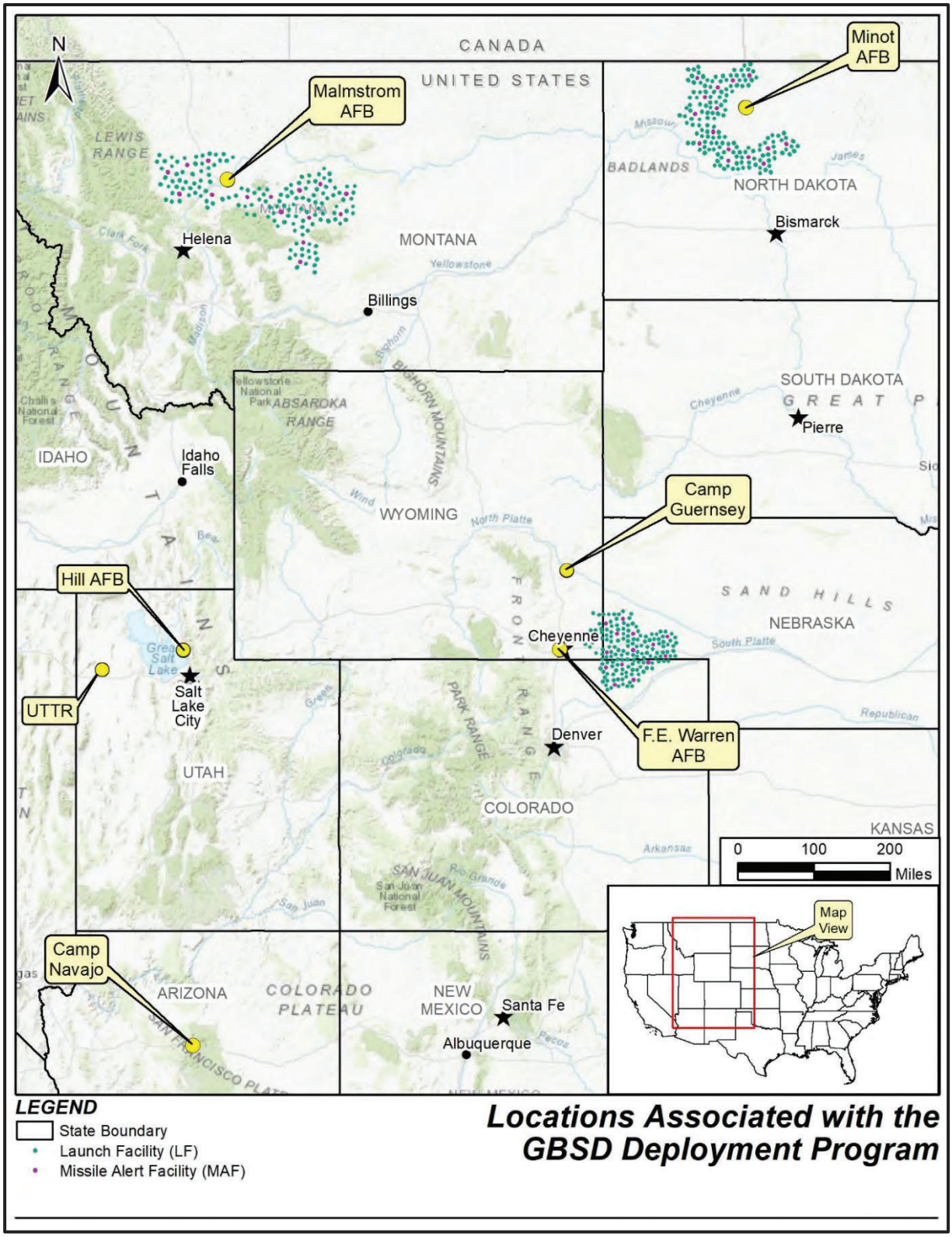
Sincerely

HART.BETH.A.1244107997 Digitally signed by HART.BETH.A.1244107997 Date: 2022.08.10 11:56:20 -05'00'

BETH A. HART, GS-15, DAF
Division Chief, Site Activation Task Force

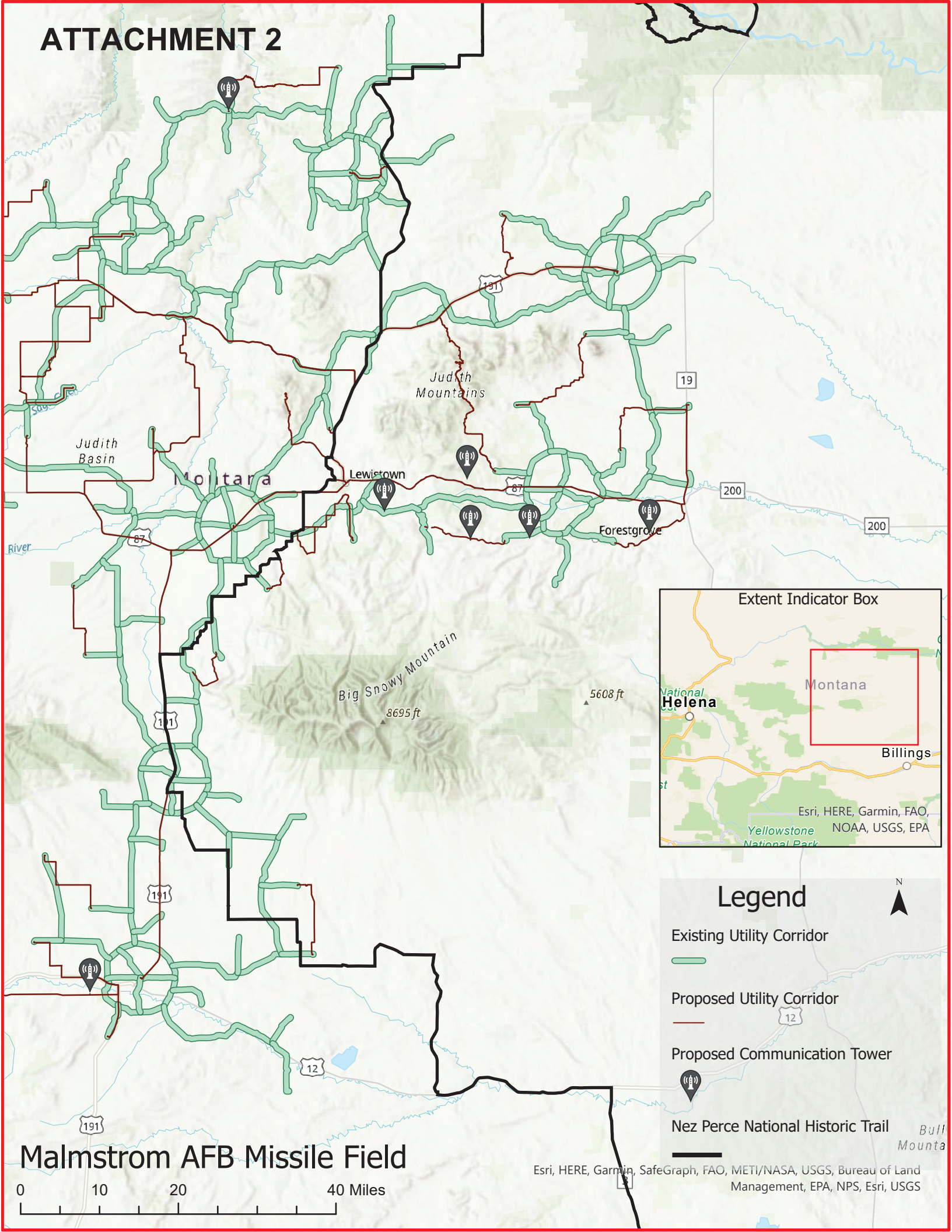
5 Attachments:
1. Map of Locations Associated with the Sentinel (GBSD) Deployment Program
2. Nez Perce National Historic Trail Location within the Project Area
3. Tribal Consultation and Involvement
4. Sentinel/GBSD Tribal Project Presentation
5. Draft EIS Notice of Availability

ATTACHMENT 1
PROJECT AREA MAP



ATTACHMENT 2
NEZ PERCE NATIONAL HISTORIC TRAIL LOCATION WITHIN THE PROJECT AREA

ATTACHMENT 2



ATTACHMENT 3
TRIBAL CONSULTATION AND INVOLVEMENT

ENVIRONMENTAL IMPACT STATEMENT FOR THE SENTINEL/GROUND BASED STRATEGIC DETERRENT DEPLOYMENT AND MINUTEMAN III DECOMMISSIONING AND DISPOSAL

TRIBAL CONSULTATION AND INVOLVEMENT

Air Force Global Strike Command
Barksdale Air Force Base, Louisiana

Involved Tribes

Extensive consultation with 60 federally recognized Tribes is occurring under Sentinel/GBSD for both the Environmental Impact Statement (EIS) and National Historic Preservation Act Section 106 compliance processes. Of these Tribes, six have declined consultation, 38 have requested continuing consultation, and 16 have not yet responded. The Air Force continues to consult with all Tribes but the six who declined. A list of the 60 Tribes included in these compliance processes follows.

Sixty Federally Recognized Tribes	
Apache Tribe of Oklahoma	Northern Arapaho Tribe
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation	Northern Cheyenne Tribe
Blackfeet Tribe of the Blackfeet Indian Reservation	Northwestern Band of the Shoshone Nation
Bois Forte Band of Chippewa	Oglala Sioux Tribe
Cheyenne and Arapaho Tribes of Oklahoma	Paiute Indian Tribe of Utah
Cheyenne River Sioux Tribe	Pawnee Nation
Chippewa Cree Tribe of the Rocky Boy's Reservation	Prairie Island Indian Community
Comanche Nation of Oklahoma	Pueblo of Taos
Confederated Salish and Kootenai Tribes of the Flathead Reservation	Pueblo of Zuni
Confederated Tribes of the Goshute Reservation	Red Lake Band of Chippewa Indians
Crow Creek Sioux Tribe	Rosebud Sioux Tribe
Crow Tribe	San Juan Southern Paiute Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation	Santee Sioux Nation
Eastern Shoshone Tribe of the Wind River Reservation	Shakopee Mdewakanton Sioux Community
Ely Shoshone Tribe of Nevada	Shoshone-Bannock Tribes of the Fort Hall Reservation
Flandreau Santee Sioux Tribe	Shoshone-Paiute Tribes of the Duck Valley Reservation
Fond du Lac Band of Lake Superior Chippewa	Sisseton-Wahpeton Oyate
Fort Belknap Indian Community	Skull Valley Band of Goshute Indians
Fort Sill Apache Tribe	Southern Ute Indian Tribe
Grand Portage Band of Lake Superior Chippewa	Spirit Lake Nation
Hopi Tribe	Standing Rock Sioux Tribe
Jicarilla Apache Tribe	Te-Moak Tribe of Western Shoshone Indians
Kiowa Tribe	Te-Moak Tribe of Western Shoshone Indians -- Wells Band of Western Shoshone
Leech Lake Band of Ojibwe	Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Little Shell Tribe of Chippewa Indians	Turtle Mountain Band of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation	Upper Sioux Indian Community
Lower Sioux Indian Community	Ute Indian Tribe of the Uintah & Ouray Reservation
Mescalero Apache Tribe	Ute Mountain Ute Tribe
Mille Lacs Band of Ojibwe	White Earth Nation of Minnesota Chippewa
Navajo Nation	Yankton Sioux Tribe

Consultation Efforts

The Air Force maintains continuing communication with the Tribes through letters, emails, meetings, and telephone calls. These methods of consultation will continue throughout the life of the Sentinel/GBSD Deployment action (2036). Specific consultation efforts that have been conducted so far include:

- May 2020 – initiated consultation with all 60 Tribes.
- July 2020 – invited the Tribes to participate in virtual tribal scoping meetings regarding the EIS.
- August - October 2020 – conducted 13 virtual tribal scoping meetings.
- Scoping comments received from Tribes addressed these topics: the Proposed Action or alternatives, the NEPA process, cultural and historic resources, hazardous materials and waste, and health and safety.
- December 2020 – initiated consultation with the Tribes regarding the methods to be used to identify and evaluate cultural resources for the GBSD Project, for inclusion in Project cultural resources survey plans.
- January 2021 – conducted six virtual tribal meetings to discuss their concerns and input for the cultural resources survey plans.
- March 2021 – distributed draft survey plans to the Tribes for review and comment.
- April - June 2021 – conducted five virtual tribal meetings to discuss the Tribes' review of the draft survey plans and tribal participation in cultural resources identification efforts for the GBSD Project.
- July 2021 – provided information regarding opportunities for Tribes to participate in field research and surveys schedule for Fall 2021 and conducted two virtual tribal meetings to discuss.
- August 2021 – conducted field research visits to Malmstrom and Minot AFBs missile fields with tribal participation. The research visit to the F.E. Warren AFB missile field was delayed until Spring 2022, in consultation with the Tribes.
- September - October 2021 – conducted full Phase I field surveys of utility corridors located on lands administered by federal agencies within all three missile fields, with tribal participation.
- September - November 2021 – provided revised survey plans for the four installations.
- October 2021 – initiated the process to develop the GBSD Programmatic Agreement.
- November 2021 – conducted two virtual meetings with Tribes to discuss initiating development of the Programmatic Agreement. Invited the Tribes to four in-person meetings to be held in February-March 2022 to consult on the Programmatic Agreement.
- December 2021 to Present - development of the Programmatic Agreement that will commit how the Air Force will follow the Section 106 process for the Sentinel/GBSD Project.

ATTACHMENT 4
SENTINEL/GBSD TRIBAL PRESENTATION

Overview of Sentinel Deployment and Minuteman III Decommissioning and Disposal

(formerly Ground Based Strategic Deterrent - GBSD)

Project Proponents

- Air Force Global Strike Command, *Barksdale Air Force Base (AFB), LA*
  - GBSD Proponent
- Air Force Nuclear Weapons Center, *Kirtland AFB, NM*
  - GBSD Program Management
- GBSD Systems Directorate, *Hill AFB, UT*
  - GBSD NEPA Management and GBSD Deployment
- U.S. Army Space and Missile Defense Command, *Huntsville, AL*
  - Contract Management
- Air Force Civil Engineer Center, *San Antonio, TX*
  - NEPA and Cultural Resources Submit Matter Expertise

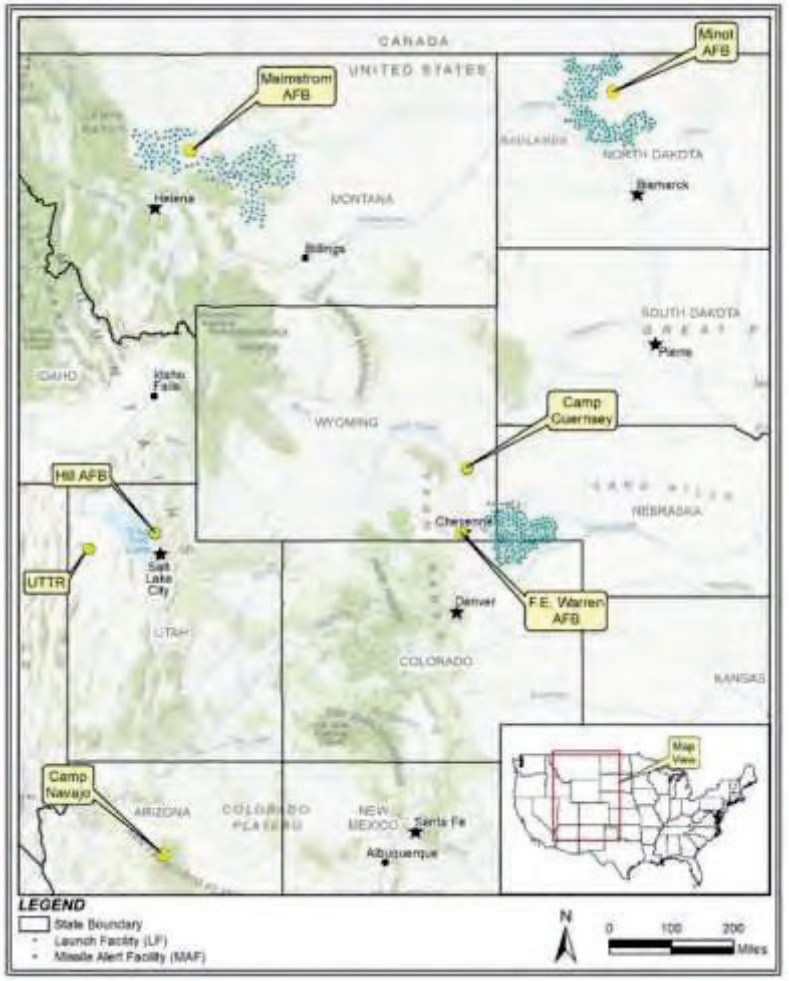
Sentinel Overview

- GBSD is the weapon system proposed to replace the aging Minuteman III ICBM system.
- It represents the modernization of the ground-based leg of the U.S. nuclear triad and would extend its capabilities through 2075.
- It is the most cost-effective option for maintaining the ground-based leg of the nuclear triad in a safe, secure, and effective manner.

Sentinel Locations

Deployment Locations
Francis E. Warren AFB, WY
Malmstrom AFB, MT
Minot AFB, ND

Support Locations
Hill AFB, UT
Utah Test and Training Range (UTTR), UT
Camp Guernsey, WY
Camp Navajo, AZ



Proposed Action

- **Off-base:** Replace all Minuteman III ICBMs deployed at F.E. Warren AFB, Malmstrom AFB, and Minot AFB, missile fields with the GBSD system; construct new and renovate existing utility corridors as needed; and construct communication towers.
- **On-base:** Construct or modify facilities and infrastructure as necessary to support GBSD maintenance, training, storage, testing, and support at F.E. Warren AFB, Malmstrom AFB, and Minot AFB, Hill AFB, UTTR, and Camp Guernsey.
- **Decommissioning and disposal:** Remove, decommission, and dispose of the Minuteman III weapons system at F.E. Warren AFB, Malmstrom AFB, Minot AFB, Hill AFB, UTTR, and Camp Navajo.

Proposed Action Elements at Each Installation

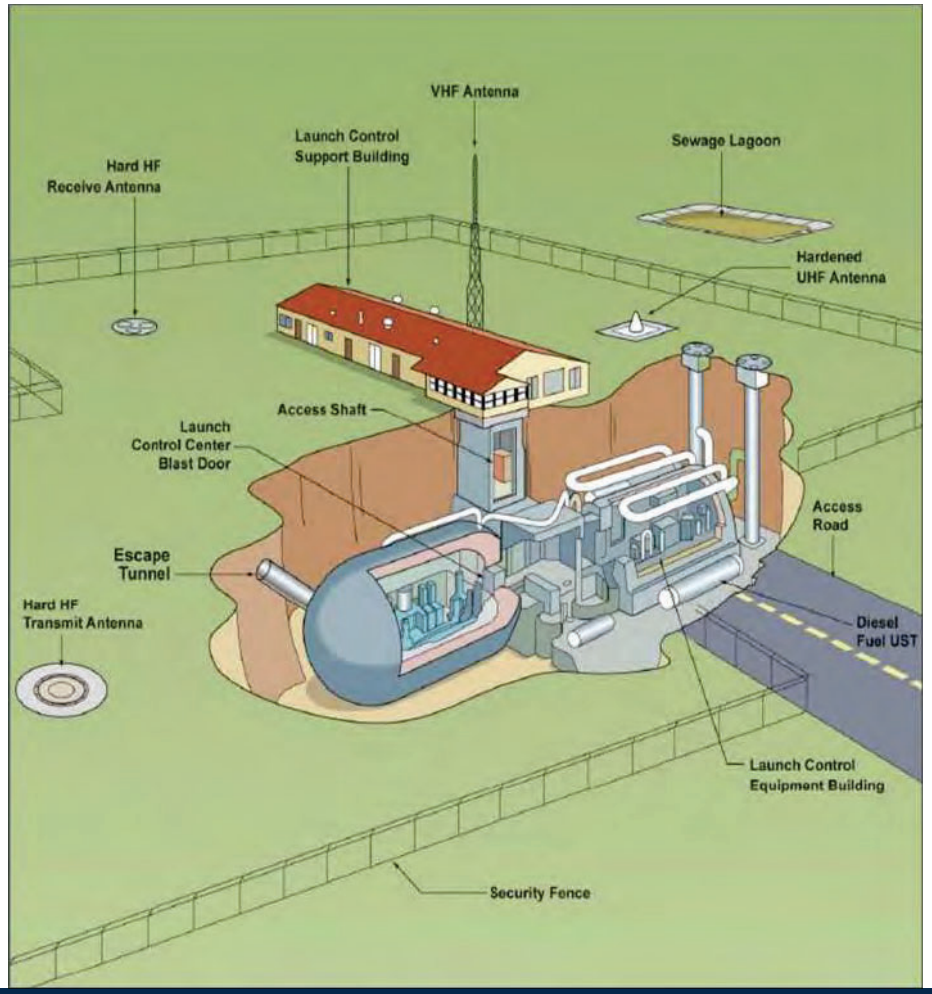
Location	On-base elements of the GBSD deployment	Off-base elements of the GBSD deployment	Decommissioning and disposal of the Minuteman III weapons system
F.E. Warren AFB	•	•	•
Malmstrom AFB	•	•	•
Minot AFB	•	•	•
Hill AFB	•		•
UTTR	•		•
Camp Guernsey	•		
Camp Navajo			•

Proposed Off-Base Actions

- Modernize missile alert facilities, launch facilities, and launch control centers in each missile field.
- Establish new utility corridors and communication towers in the missile fields to increase system redundancy.
- Upgrade existing utility corridors as needed.
- Establish temporary workforce hubs and centralized staging areas.
- Begin construction in the mid-2020s and complete it by the mid-2030s.

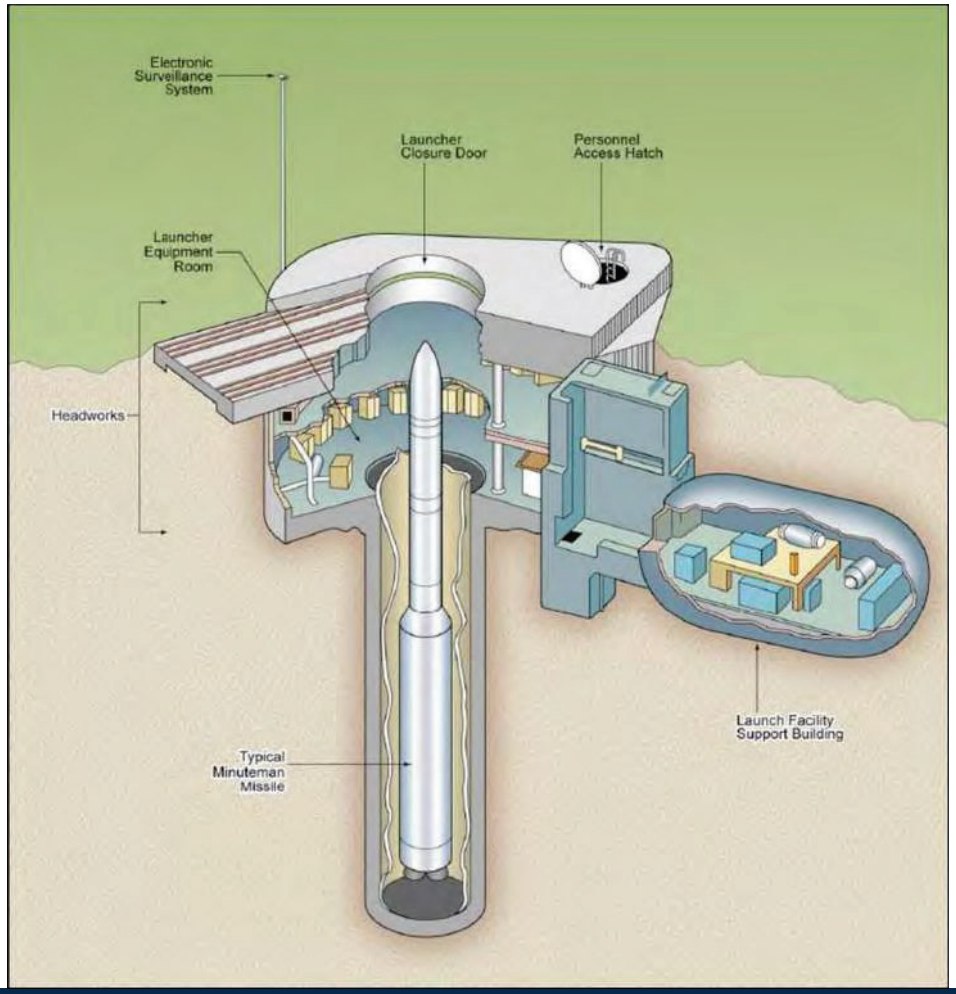
Missile Alert Facility and Launch Control Center

- 15 per missile field.
- Up to 8 per missile field would be made like new.
- Remainder would be decommissioned or repurposed.
- Configuration varies.



Launch Facility

- 150 per missile field.
- All would be made like new.
- Configuration varies.



Proposed Utility Corridors

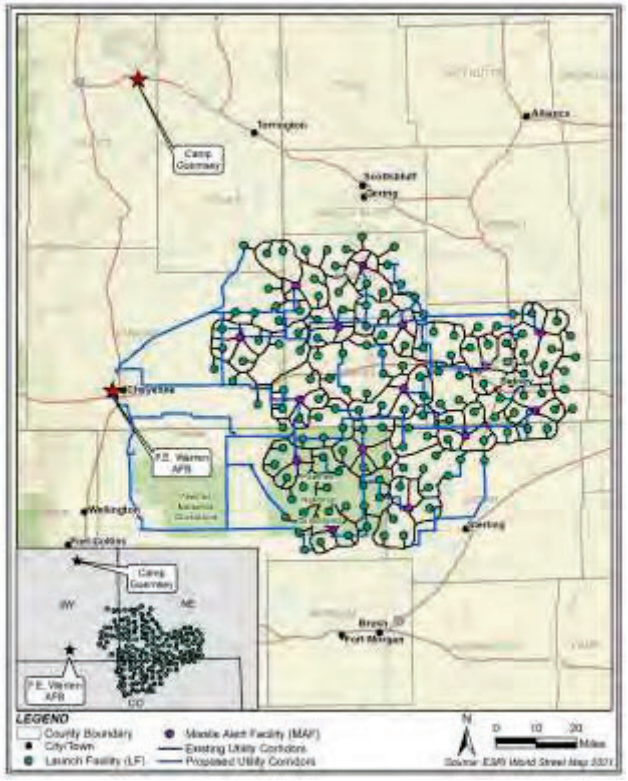
- The Project includes:

1) 3,100 miles of new utility corridor throughout the three missile fields
   - 900 miles at F.E. Warren AFB.
   - 1,250 miles at Malmstrom AFB.
   - 920 miles at Minot AFB.

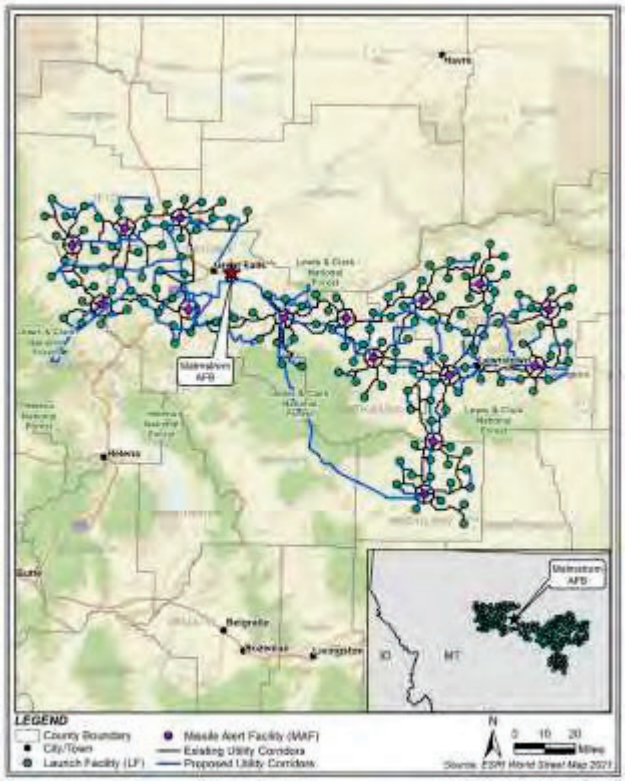
2) Installation of new utility components on existing aboveground infrastructure (e.g., existing utility poles) that currently follow the same routes as the proposed new utility corridors.

Proposed Utility Corridors (con't)

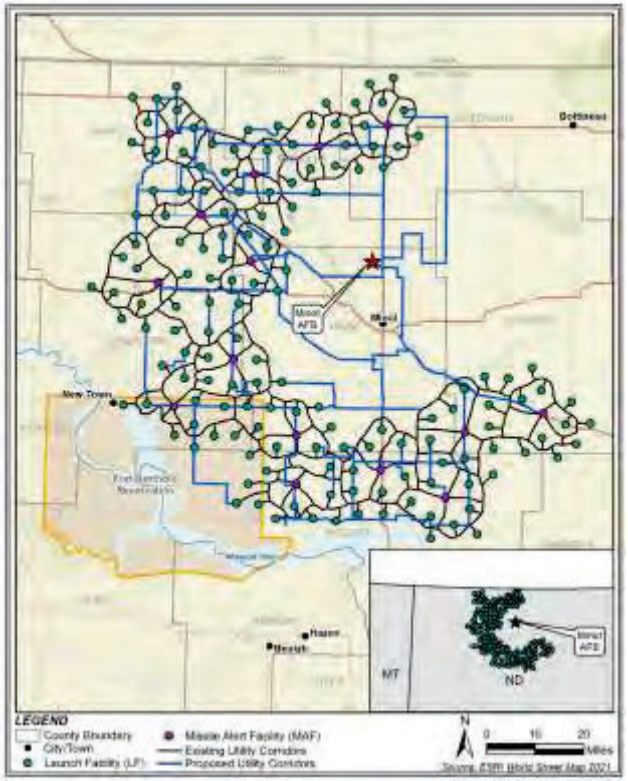
3) Removal, replacement, and addition of utility components to the existing utility corridors throughout the three missile fields, as needed.
   - 1,611 miles of existing corridor in the F.E. Warren AFB missile field.
   - 1,751 miles of existing corridor in the Malmstrom AFB missile field.
   - 1,531 miles of existing corridor in the Minot AFB missile field.
   - Activities would be the same as with the new utility corridors, including clearing and grubbing to provide access to the area; installation and maintenance of erosion control devices; trenching; and reseeding and restoration, as appropriate.



- Proposed Utility Corridor Actions at F.E. Warren AFB
  - 900 miles of new utility corridors
  - Work within 1,611 miles of existing utility corridors



- Proposed Utility Corridor Actions at Malmstrom AFB
  - 1,250 miles of new utility corridors
  - Work within 1,751 miles of existing utility corridors



- Proposed Utility Corridor Actions at Minot AFB
  - 920 miles of new utility corridors
  - Work within 1,531 miles of existing utility corridors

Utility Corridors

Agency	Proposed Action	
	New Corridors	Existing (MMIII)
Fort Berthold Indian Reservation	56.2 miles	88.0 miles
U.S. Forest Service	74.7 miles	55.2 miles
U.S. Fish and Wildlife Service	15.8 miles*	21.4 miles
Bureau of Land Management	18.7 miles	21.3 miles
Bureau of Reclamation	3.2 miles	5.3 miles
U.S. Army Corps of Engineers	2.1 miles	5.4 miles

*USFWS is owned property only. There are 86.6 miles in the Proposed Action and 147.8 miles in the Proposed Action affecting easements.

Proposed Utility Corridors Construction

- Air Force would employ a commonsense approach to utility corridor siting, including avoidance and minimization of impacts.
- Utility corridors would require trenching to a depth of 4–8 feet and approximately 2 feet wide.
- Directional drilling would be used where necessary, such as to install utility lines beneath roadways and stream crossings.

Proposed Communication Towers

- Approximately 62 communication towers would be constructed within the three missile fields (18 at F.E. Warren AFB, 31 at Malmstrom AFB, and 13 at Minot AFB).
- Towers would be either lattice structures or masts, would be 300 feet in height, and require guy wires.
- Tower sites would be approximately 5 acres in size and generally be located near existing roads and utilities.

Selection Criteria for Workforce Hubs and Staging Areas

Site Selection

- Coordinate with city and county officials before selecting sites
- Acquire permits as necessary to meet all local zoning requirements
- Comply fully with local planning requirements and plans
- Locate in areas without sensitive resources
- Established in accordance with the OSHA Section 1910.142, Subpart J – Temporary Labor Camps.
- Following construction facilities would be closed, removed, and restored

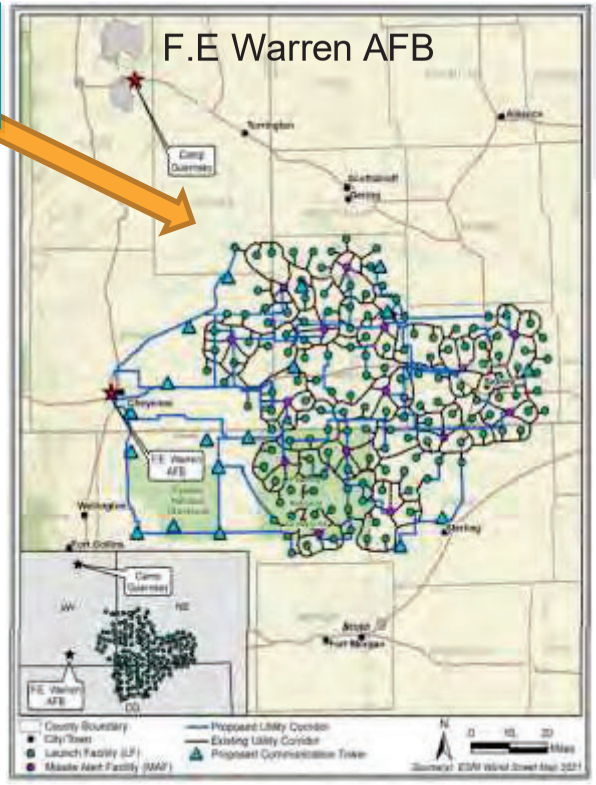
Personnel

- Prepare and maintain a site-specific Public Health and Safety Plan
- Conduct regular Public Health and Safety briefings
- Maintain and enforce written security policies and protocols
- Hire on-site security personnel, as necessary
- Background checks for all temporary construction workers
- Zero tolerance policies for noncompliance with local ordinances

Overview of Sentinel Deployment and Minuteman III Decommissioning and Disposal

Off-Base Construction

- 15 Missile Alert Facilities
- 150 Launch Facilities
- 18 Communication Towers
- 900 Miles of New and 1611 Miles of Existing Utility Corridors



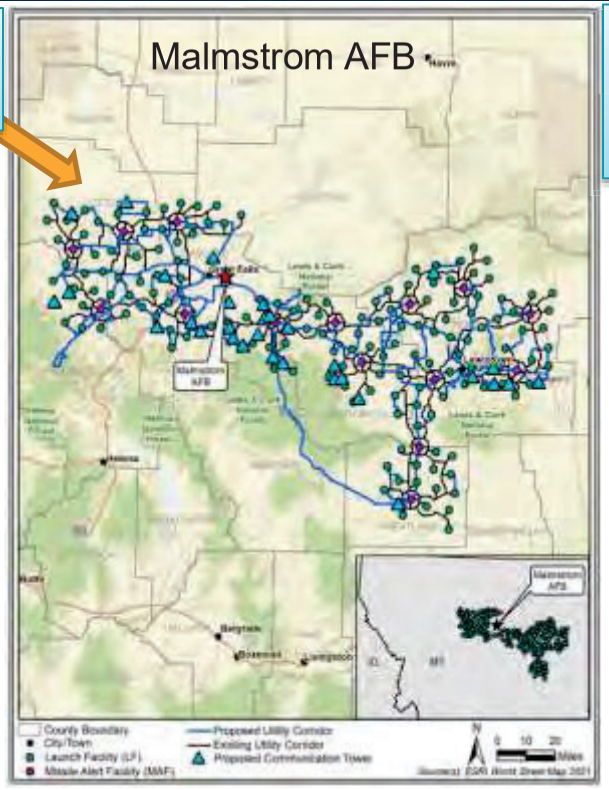
Temporary Workforce Hubs & Laydown Areas

- 1 workforce hub with 2,500 to 3,000 employees
  - Kimball, NE
- 4 laydown/ staging areas
  - Albin, WY
  - Kimball, NE
  - Sidney, NE
  - Stoneham, CO
- In place 3 to 5 years

Overview of Sentinel Deployment and Minuteman III Decommissioning and Disposal

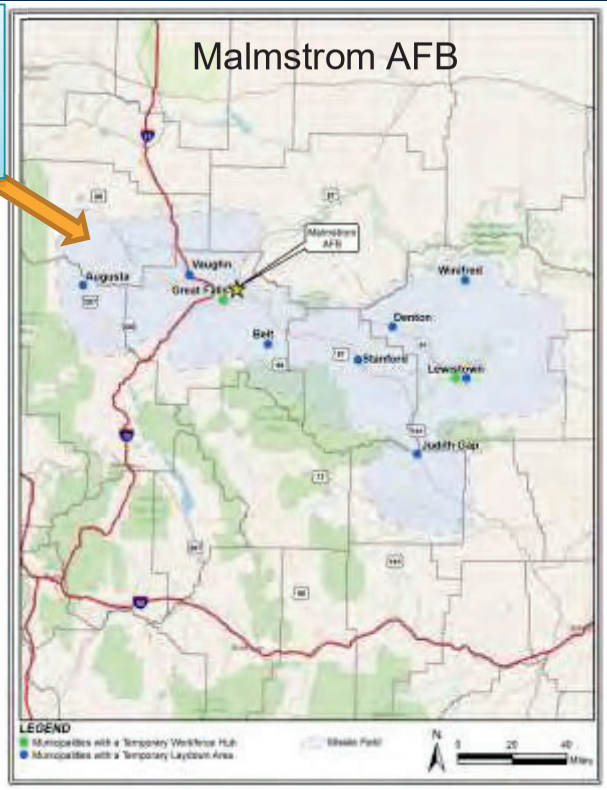
Off-Base Construction

- 15 Missile Alert Facilities
- 150 Launch Facilities
- 31 Communication Towers
- 1250 Miles of New and 1751 Miles of Existing Utility Corridors



Temporary Workforce Hubs & Laydown Areas

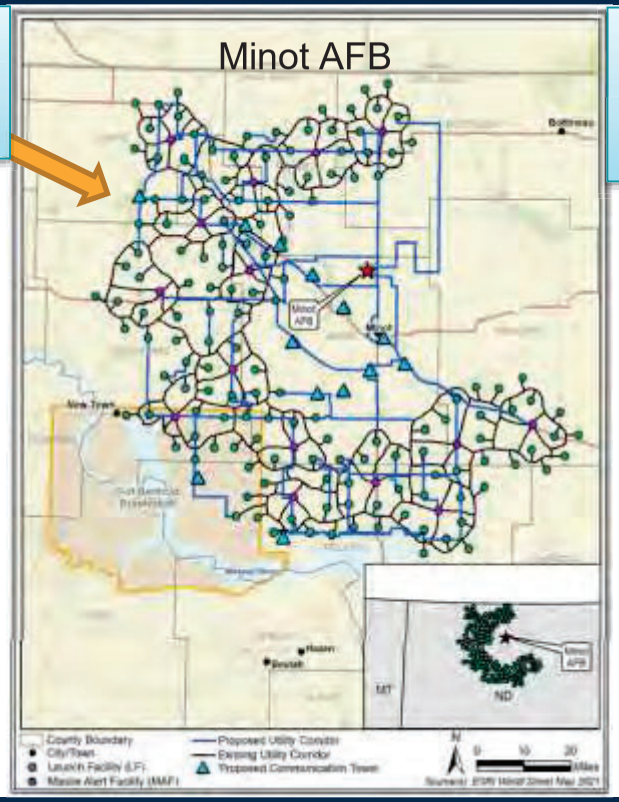
- 2 workforce hubs with 2,500 to 3,000 employees
  - Great Falls, MT
  - Lewistown, MT
- 8 laydown/staging areas
  - Augusta, MT
  - Vaughn, MT
  - Belt, MT
  - Stanford, MT
  - Denton, MT
  - Lewiston, MT
  - Judith Gap, MT
  - Winifred, MT
- In place 3 to 5 years



Overview of Sentinel Deployment and Minuteman III Decommissioning and Disposal

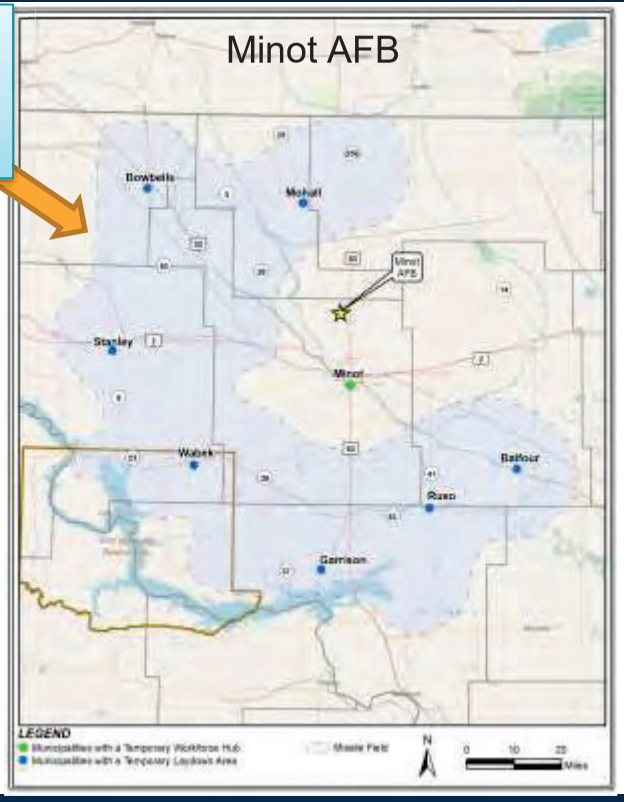
Off-Base Construction

- 15 Missile Alert Facilities
- 150 Launch Facilities
- 13 Communication Towers
- 920 Miles of New and 1531 Miles of Existing Utility Corridors



Temporary Workforce Hubs & Laydown Areas

- 1 workforce hub with 2,500 to 3,000 employees
  - Minot, ND
- 7 laydown/staging areas
  - Bowbells, ND
  - Mohall, ND
  - Stanley, ND
  - Wabek, ND
  - Garrison, ND
  - Ruso, ND
  - Balfour, ND
- In place 3 to 5 years

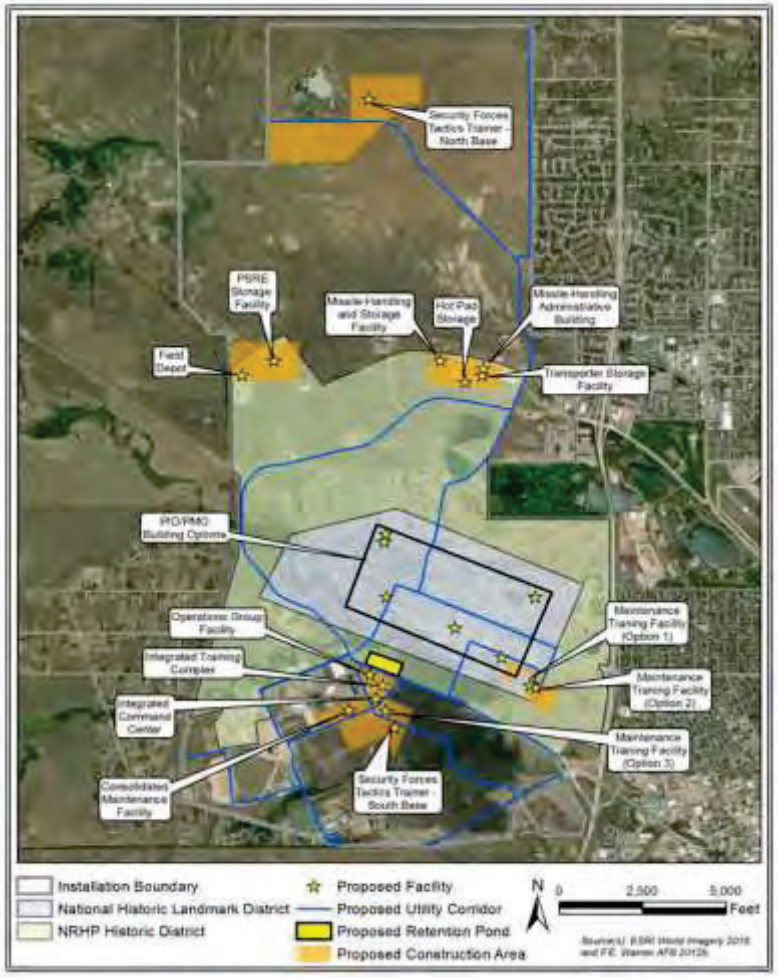


Proposed On-Base Actions

- Construct and modify on-base facilities and infrastructure as needed to support:
  - Sentinel command, communications, maintenance, training, and storage at F.E. Warren AFB, Malmstrom AFB, and Minot AFB.
  - Sentinel maintenance, training, storage, and testing facilities at Hill AFB, UTTR, and Camp Guernsey.

On-Base Construction at F.E. Warren AFB and Camp Guernsey

F.E. Warren is home to the 90th Missile Wing. On-base actions at F.E. Warren AFB and Camp Guernsey would include new construction and renovation to support GBSD command, communications, maintenance, training, and storage facilities.



On-Base Construction at Malmstrom AFB

Malmstrom AFB is home to the 341st Missile Wing. On-base actions at Malmstrom AFB would include new construction and renovation to support GBSD command, communications, maintenance, training, and storage facilities.

On-Base Construction at Minot AFB

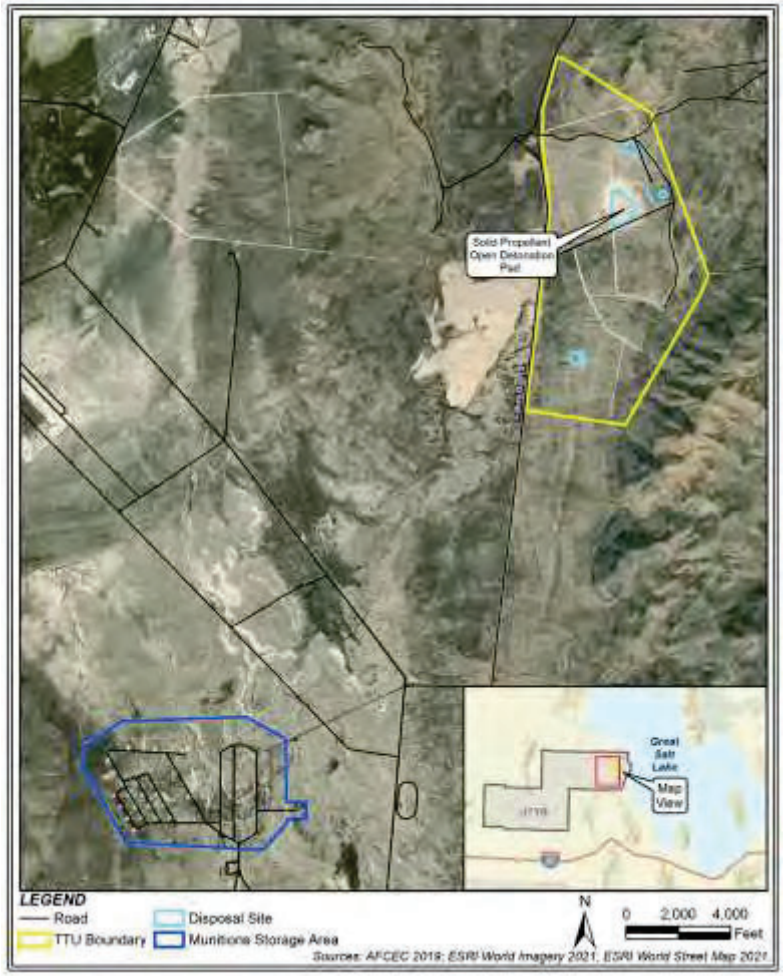
Minot AFB is home of the 91st Missile Wing. On-base actions at Minot AFB would include new construction and renovation to support GBSD command, communications, maintenance, training, and storage facilities.

On-Base Construction at Hill AFB

On-base actions at Hill AFB would include new construction and renovation to support GBSD maintenance, storage, and training support facilities.

On-Base Construction at UTTR

On-base actions at UTTR would include construction of new storage facilities at the Munitions Storage Area and disposal of Minuteman III missile components at UTTR's Thermal Treatment Unit (TTU).



Sentinel Consultation Efforts

- Consultation with Tribes, SHPOs, and other Federal Agencies began in May 2020
- Survey and Work Plans outlined standard methods for field work, identification and evaluation of sites, reporting, etc.
- Participation of Tribal Cultural Specialists (TCS)
- Development of GBSD Programmatic Agreement

Consulting Parties include:

7 SHPOs
1 THPO
54 Tribes
9 Federal Agencies
National Historic Landmarks and National Trials Programs
15 Other Consulting Parties

23 Tribal Nations Visited

2021 Survey and Investigation Activities

- Conducted biological and wetland surveys of 492 miles for new utility corridors (17% of total new corridors)
- Conducted field inspections of 1,648 miles of new utility corridors on non-federal lands
- Conducted 2 one-week fieldwork sessions for Traditional Cultural Specialists (TCSs) in the Malmstrom and Minot missile fields. Pre-survey field research, similar to Class I records search, to assist in the familiarization with the entirety of each missile field and enable the TCSs to conduct broader area inspections and gather data to discuss with their Tribe
- Conducted formal cultural resources survey and site recording with Tribal Cultural Specialists (TCSs) of project areas at all three missile fields that are located on lands controlled by other federal agencies

Overview of Sentinel Deployment and Minuteman III Decommissioning and Disposal

Malmstrom AFB Missile Field

528 acres surveyed Sept 15-20, 2021

- Utility corridors on Bureau of Land Management, Bureau of Reclamation, and Helena-Lewis and Clark National Forest
- Survey Team: 6 archaeologists and 11 Tribal Cultural Specialists from 5 Tribes (Blackfeet, Cheyenne River Sioux, Little Shell Chippewa, Northern Arapaho, and Rosebud Sioux)
- 37 sites and 7 isolated finds: included ditches, canals, dam, roads, railroads, homesteads, kilns, powerlines, dumps, trash scatters, prospecting trenches/pits, one identified Tribally significant property, rock cairns, possible burials, stone rings, culturally modified trees

Minot AFB Missile Field

301 acres surveyed Sept 29 – Oct 4, 2021

- Utility corridors on U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers.
- Survey Team: 6 archaeologists and 11 Tribal Cultural Specialists from 8 Tribes (Blackfeet, Cheyenne River Sioux, Fort Belknap Assiniboine and Gros Ventre, Little Shell Chippewa, Northern Arapaho, Oglala Sioux, Rosebud Sioux, and Standing Rock Sioux)
- 17 sites and 2 isolated finds: included a bridge, road, ramp, spillway, ditch, dam, parsonage, rock features and alignments, cairns, and lithic scatters

F.E. Warren AFB Missile Field

404 acres surveyed Oct 14-19, 2021

- Utility corridors on U.S. Forest Service as Pawnee National Grassland.
- Survey Team: 6 archaeologists and 11 Tribal Cultural Specialists from 8 Tribes (Blackfeet, Cheyenne River Sioux, Fort Belknap Assiniboine and Gros Ventre, Northern Arapaho, Oglala Sioux, Pawnee, Rosebud Sioux, and Standing Rock Sioux)
- 15 sites and 7 isolated finds: included homesteads, ditch, trash scatters, lithic scatters

Programmatic Agreement – Full Tribal Involvement

- Development of Sentinel Programmatic Agreement
  - 4 in-person meetings held in Feb/Mar 2022
  - Preliminary Draft PA with Recitals and Annotated Outline sent 29 Mar 2022 for 30 day review and comment period
  - 2 virtual meetings scheduled for 25 and 27 Apr 2022
  - Second Draft PA with Stipulations sent 1 Jun 2022 for 30 day review and comment period
  - 4 in-person meetings in June 2022
  - Third Draft PA scheduled to be sent to all consulting parties on 5 August 2022

Initial in-person meetings included:
18 Tribal Nations
6 SHPO Offices
1 THPO Office
5 Federal Agencies
4 Other Consulting Parties
Air Force personnel
Contractor support

Tribal EIS Briefings held on 6 and 13 June 2022 (virtual)

Establishing Tribal Consultation Protocols for the PA

- Federal recognition of Nation-to-Nation consultation requirements and Tribal knowledge/expertise
- ACHP Guidance and Information Papers Related to Federal-Tribal Coordination
- Procedural Protocols - The basic tenets within which Tribal consultation shall be initiated and conducted
- Cultural Understanding Protocols - Achieving meaningful and effective Tribal consultation
- Behavioral Protocols - Effective and respectful communication and contributions

Programmatic Agreement Development Schedule

Proposed Schedule:

- November 2021 – virtual meetings
- February 2022 – in-person meetings
- March 2022 – distribute Preliminary Draft PA (recitals and annotated outline)
- April 2022 – virtual meetings
- June 2022 – distribute 2nd Draft PA
- June/July 2022 – in-person meetings
- August 2022 – distribute 3rd Draft PA
- September 2022 – virtual meetings
- November 2022 – distribute Final PA for signatures
- December 2022 – acquire ACHP signature

Thank You

ATTACHMENT 5
DRAFT ENVIRONMENTAL IMPACT STATEMENT
NOTICE OF AVAILABLITY

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

July 1, 2022

Howard N. Kosht, GS-15, DAF
Reply to: GBSD Project EIS
10306 Eaton Place, Suite 340
Fairfax, VA 22030

Dear Stakeholder

Pursuant to the National Environmental Policy Act of 1969 (NEPA) (Title 42 *United States Code* § 4321); the Council on Environmental Quality regulations for implementing NEPA (Title 40 *Code of Federal Regulations* [CFR] Parts 1500–1508); and the Air Force Environmental Impact Analysis Process (EIAP) as codified in 32 CFR Part 989, the Air Force has prepared a Draft Environmental Impact Statement (EIS) for public review that analyzes the potential environmental consequences associated with the proposed deployment of the Ground Based Strategic Deterrent (GBSD) Intercontinental Ballistic Missile (ICBM) weapons system, called Sentinel, and decommissioning and disposal of the aging Minuteman III ICBM weapons system. The Bureau of Indian Affairs, Bureau of Land Management, Bureau of Reclamation, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, U.S. Forest Service, and Wyoming Army National Guard are cooperating agencies for the EIS.

The purpose of the Proposed Action is to replace all land-based Minuteman III missiles deployed in the continental U.S. with the technologically advanced GBSD system. The Proposed Action is needed to meet national security requirements and to comply with the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Publ. L. 115-232 § 1663, 132 Stat. 2153), which directs the Air Force to develop and implement a strategy "to accelerate the development, procurement, and fielding of the ground based strategic deterrent program."

In addition to replacing all land-based Minuteman III ICBMs with the GBSD ICBMs, all launch facilities, communication systems, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. Decommissioning and disposal activities would include destruction of all Minuteman III weapon systems and associated components to prevent their further use for their originally intended purpose. While certain components and subsystems of the Minuteman III have been upgraded, most of the fundamental infrastructure used today is the nearly 50-year-old original equipment. The Proposed Action would not include generating or disposing of nuclear material, and the number of land-based nuclear missiles would remain unchanged. The nuclear warheads from the Minuteman III system would be used for the GBSD system. Deployment of the GBSD system would begin in the mid-2020s, extending the capabilities of the land-based leg of the U.S. nuclear triad through at least 2075.

Both on- and off-base construction and operational activities would take place at Francis E. Warren (F.E.) Air Force Base (AFB), WY, Malmstrom AFB, MT, and Minot AFB, ND, and throughout the missile fields. Additional construction, maintenance, training, storage, testing, support, decommissioning, and disposal actions would occur at Hill AFB, UT; the Utah Test and Training Range, UT; Camp Guernsey, WY; and Camp Navajo, AZ. Deployment of the GBSD system would begin in 2023 at F.E. Warren AFB, and be implemented at Malmstrom AFB and Minot AFB over the next 15 years. The proposed GBSD deployment activities would include the construction and renovation of

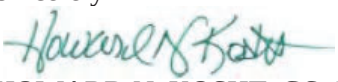
approximately 1,569,000 square feet of on-base facilities, and the refurbishment of all 450 launch facilities and 45 missile alert facilities, construction of 62 new communication towers on newly acquired properties, the establishment of approximately 3,100 miles of new utility corridors, and the potential to conduct utility work within the nearly 5,000 miles of existing utility easements throughout the missile fields of F.E. Warren, Malmstrom, and Minot AFBs. During construction, a workforce hub would be established in or near Great Falls and Lewistown, MT, Kimball, NE, and Minot, ND, housing up to 3,000 temporary workers and support personnel each, and 19 centralized construction laydown areas would be established in or near Stoneham, CO; Augusta, Belt, Denton, Judith Gap, Lewistown, Stanford, Vaughn, and Winifred, MT; Kimball and Sydney, NE; Balfour, Bowbells, Garrison, Mohall, Ruso, Stanley, and Wabek, ND; and Albin, WY. While there would be no construction at Camp Navajo, the proposed GBSD deployment activities would include use of the existing missile storage area during Minuteman III decommissioning and disposal activities.

The EIS evaluates two alternatives to the Proposed Action, the Reduced Utility Corridors Alternative and the No Action Alternative (as required by NEPA). The Reduced Utility Corridors Alternative would replace all land-based Minuteman III ICBMs deployed in the continental United States with GBSD ICBMs, as would the Proposed Action. And, while it includes most of the elements of the Proposed Action, it also proposes establishing appreciably fewer miles of new utility corridors and reutilizing marginally fewer miles of existing utility corridors. Under the No Action Alternative, the Air Force would continue to maintain and operate the Minuteman III weapon system in its current configuration, and the GBSD weapon system would not be deployed.

The public comment period for the GBSD EIS begins with publication of the Notice of Availability (NOA) in the *Federal Register* on or about July 1, 2022. Advertisements will be published in local newspapers notifying the public of the EIS comment period and the 7 regional in-person and 2 virtual public hearings. See the included flyer for additional information on the hearings and how to obtain or where to review the Draft EIS. The Draft EIS and all materials that will be presented at the public hearings are available for review on the project website at www.gbsdeis.com. On the website, you will find information about the locations and registration procedures for all public hearings. The website will become accessible the day the NOA is published.

To ensure a thorough review of the analysis in the Draft EIS, the Air Force is soliciting comments from interested local, state, and federal agencies and organizations; Native American Tribes; and members of the public. Comments on the Draft EIS may be submitted in a variety of ways to include orally at the in-person and virtual public hearings or in writing at in-person public hearings, through the project website at www.gbsdeis.com; via email to gbsdeis@tetratech.com; or by mail to: GBSD Project EIS, 10306 Eaton Place, Suite 340, Fairfax, VA, 22030. The Air Force requests that comments on the Draft EIS be submitted within 45 days of the publication of the NOA to ensure they are considered by the Air Force for the Final EIS. If you are unable to access the website or would like to request printed or digital copies of materials, please send an email to gbsdeis@tetratech.com.

Sincerely



HOWARD N. KOSHT, GS-15, DAF
Executive Director, Strategic Plans, Programs, and Requirements

Public Hearings and Providing Comments on the
Draft Environmental Impact Statement for the Proposed Ground Based
Strategic Deterrent Deployment and Minuteman III Decommissioning and Disposal

The public is invited to review and comment on the Air Force's Draft Environmental Impact Statement (EIS) for the proposed Ground Based Strategic Deterrent (GBSD) Deployment and Minuteman III Decommissioning and Disposal.

Where to Obtain the Draft EIS

The Draft EIS is available for review and download at www.gbsdeis.com. An electronic copy may be requested by calling (307) 773-3400 or emailing gbsdeis@tetratech.com. It may also be reviewed at the at the following public libraries:

Fort Berthold Library	Minot Public Library	Kimball Public Library	Laramie County Library	Great Falls Public Library	Lewistown Public Library
220 8th Ave E New Town, ND 58763	516 2nd St Ave SW Minot, ND 58701	208 S Walnut St. Kimball, NE 69145	2200 Pioneer Ave. Cheyenne, WY 82001	301 2nd Ave. N Great Falls, MT 59401	701 W Main St. Lewistown, MT 59457

Public Hearing Information

The Air Force is holding two virtual and seven regionally-based in-person public hearings to provide information about the proposed project and to accept comments on the draft EIS. All members of the public are encouraged to attend as your input will assist the Air Force in making more informed decisions. The public hearings will include (1) opening remarks by Air Force Global Strike Command (AFGSC); (2) a pre-recorded presentation outlining the scope of the proposed GBSD project and the findings of the Draft EIS; and (3) an opportunity for attendees to provide oral and/or written comments. The presentation at in-person hearings will begin 30 minutes after the start time, formal public testimony will begin approximately one hour later, and the hearing venue will close 3 hours after the start time. Oral comments will be limited to 3 minutes for all public hearings. Comments of considerable length can be submitted in writing through the project website, via email, or through the US mail (see Public Comment section below).

Regional In-Person Public Hearings

Jul 19, 2022	5:30-8:30pm CT	Three Affiliated Tribes Pow Wow Grounds, New Town, ND
Jul 21, 2022	5:30-8:30pm CT	Minot Municipal Auditorium (Old Armory Rm), 430 3rd Ave. SW, Minot, ND 58701
Jul 26, 2022	5:30-8:30pm MT	Mansfield Ctr for Performing Arts (Missouri Rm), 2 Park Drive S, Great Falls, MT 59401
Jul 28, 2022	3:00-6:00pm MT	Fergus County Fairgrounds, 153 Fairgrounds Road, Lewistown, MT 59457
Aug 2, 2022	5:30-8:30pm MT	Kimball Jr/Sr High School, 901 S Nadine St, Kimball, NE, 69145
Aug 3, 2022	5:30-8:30pm MT	Prairie High School, 42315 Wcr 133, New Raymer, Colorado 80742
Aug 4, 2022	5:30-8:30pm MT	ANB Bank Leadership Center, 1400 E College Drive, Cheyenne, WY 82007

Virtual Public Hearings

Aug 8, 2022 5:30-8:30pm CT
Aug 9, 2022 5:30-8:30pm MT

REGISTRATION REQUIRED
at www.gbsdeis.com

- All public hearing materials are available at www.gbsdeis.com.
- Hearings may adjourn before 8:30, if all oral comments have been provided.

To request accommodation to access the print and audio presentation, ask for help making a comment (per the Americans with Disabilities Act), or if you need assistance attending via phone due to lack of internet availability, please call AFGSC Public Affairs at (307) 773-3400 no later than August 1, 2022.

Public Comments

In addition to providing comments on the Draft EIS during the public hearings, written comments can be submitted through the project website at www.gbsdeis.com; via email to gbsdeis@tetratech.com; or by US mail to: GBSD EIS, 10306 Eaton Place, Suite 340, Fairfax, VA, 22030.

Comments will be accepted at any time during the environmental review process. However, oral comments provided at the public hearings and written comments received by August 15, 2022, will be considered in the preparation of the Final EIS.

Air Force Sentinel (Ground Based Strategic Deterrent) Project

MILLER, PAMELA K GS-13 USAF AFCEC AFCEE/CZOM <pamela.miller.7@us.af.mil>

Wed 8/10/2022 4:45 PM

To: katbrigham@ctuir.org <katbrigham@ctuir.org>

Cc: careymiller@ctuir.org <careymiller@ctuir.org>;catherinedickson@ctuir.org <catherinedickson@ctuir.org>;tearafarrowferman@ctuir.org <tearafarrowferman@ctuir.org>;RUBIO, ALISON S GS-14 USAF AFMC AFCEC/CZTQ <alison.rubio@us.af.mil>;AUBUCHON, BENJAMIN L GS-13 USAF AFMC AFCEC/CZTQ <benjamin.aubuchon.1@us.af.mil>;OWENS, STEVEN M GS-12 USAF AFCEC AFCEE/CZOM <steven.owens.25@us.af.mil>;Sumner,Ray <Raymond.Sumner@colostate.edu>;j.javi.vasquez@colostate.edu <J.Javi.Vasquez@colostate.edu>;BARTHOLOMEW, RUSSELL G GS-13 USAF AFMC AFNWC/NX <russell.bartholomew@us.af.mil>;KNIGHT, ROBERT N GS-13 USAF AFMC AFNWC/NXDX <robert.knight.33@us.af.mil>;NEWCOMER, STEPHANIE H GS-13 USAF AFMC AFCEC/CZN <stephanie.newcomer@us.af.mil>;Childers, Jamie <JAMIE.CHILDERS@tetratech.com>;Cook, Jason1 <Jason.Cook2@tetratech.com>;Kaplan, Julie <Julie.Kaplan@tetratech.com>

1 attachments (2 MB)

Sentinel (GBSD) - Umatilla Indian Reservartion Consultation Letter.pdf;

Chairwoman Brigham

Greetings! Attached please find a letter and supporting documentation related to the Air Force's Sentinel (formerly Ground Based Strategic Deterrent or GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM Project. This letter and attachments have also been mailed to your office.

Through our environmental analysis and development of a Draft Programmatic Agreement (PA) for compliance with Section 106 of the National Historic Preservation Act, we have determined that portions of the Nez Perce (Nimíipuu or Nee-Me-Poo) National Historic Trail lie within the boundaries of the Project. As such, the Air Force would like to take this opportunity to offer government-to-government consultation with your Tribe regarding Project activities. This letter provides further details, maps, and a full Project presentation for your review and consideration, and we have included Carey Miller, Tribal Historic Preservation Officer/Tribal Archaeologist, Catherine Dickson, Cultural Resources, and Teara Farrow Ferman, Cultural Resources, on this email as well.

I am the point of contact for the Cultural Resources and Tribal aspects of this Project. Please do not hesitate to contact me with questions or if you and your staff would like to set up a meeting (virtual or in-person) to further discuss the Project or the PA. We look forward to your response and to working with your Tribe!

Respectfully,

Pamela Miller, Sentinel (GBSD) AF Cultural Resources & Tribal Relations Lead

Archaeologist/Historian; Cultural Resources Media Manager
Midwest Branch/Peterson Installation Support Section
Air Force Civil Engineer Center (AFCEC)
Cell: 719.510.6773; pamela.miller.7@us.af.mil

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

10 August 2022

Beth A. Hart, GS-15, DAF
Division Chief, Site Activation Task Force (SATAF)
HQ AFGSC/A5F
Reply to: Tetra Tech, Inc.
ATTN: Sentinel (GBSD) Project
10306 Eaton Place
Fairfax, VA 22030

Ms. N. Kathryn Brigham
Board of Trustees Chair
Confederated Tribes of the Umatilla Indian Reservation
46411 Timíne Way
Pendleton, OR 97801

Dear Board of Trustees Chair Brigham

The United States Air Force has been engaged in planning efforts for the deployment of the Sentinel (formerly Ground Based Strategic Deterrent or GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The Sentinel weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would primarily occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Additional maintenance, training, storage, disposal, and support actions would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see the map at Attachment 1).

It has come to our attention that portions of the Nez Perce (Nimíipuu or Nee-Me-Poo) National Historic Trail (the Trail) lie within the Project area in the Malmstrom AFB missile field in Montana. Although the Trail is managed by the U.S. Forest Service of the U.S. Department of Agriculture, the Air Force would like to take this opportunity to offer government-to-government consultation with your Tribe regarding the Trail and other Project undertakings that may potentially have an effect on properties or areas of religious, traditional, and cultural importance to your Tribe. Attachment 2 shows the location of the Trail with respect to the Project area.

In accordance with the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force Global Strike Command, Air Force Nuclear Weapons Center, and Air Force Civil Engineer Center initiated government-to-government consultation with 60 identified federally-recognized Native American Tribal governments in May of 2020. Through continuing consultation, 54 of those Tribes have chosen to be consulting parties for the Project. Attachment 3, Tribal Consultation and Involvement, provides a brief outline of our consultation efforts to date.

Sentinel deployment activities would include completely replacing all Minuteman III ICBMs deployed in the continental United States with the Sentinel system, a technologically mature ICBM system. Sentinel would replace all components of the Minuteman III, including the three motor stages, interstages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the Sentinel system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the Sentinel systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged. The slide presentation in Attachment 4 provides additional details and graphics for your review.

The Air Force is in the process of working with 54 Tribes, 1 Tribal Historic Preservation Officer, 7 State Historic Preservation Officers, 9 cooperating Federal agencies, and numerous other consulting parties on a Programmatic Agreement (PA) for compliance with Section 106 of the NHPA for the entirety of the Project. Details regarding this consultation and the third Draft PA were included in the email transmission of this letter. A Comment Matrix accompanied the Draft PA, and we are respectfully requesting comments by September 9, 2022.

In addition, pursuant to the National Environmental Policy Act of 1969 (NEPA) (Title 42 *United States Code* § 4321); the Council on Environmental Quality regulations for implementing NEPA (Title 40 *Code of Federal Regulations* [CFR] Parts 1500–1508); and the Air Force Environmental Impact Analysis Process (EIAP) as codified in 32 CFR Part 989, the Air Force has prepared a Draft Environmental Impact Statement (EIS) for public review that analyzes the potential environmental consequences associated with the proposed deployment of the Sentinel ICBM decommissioning and disposal Project. The Notice of Availability for review and comment on the Draft EIS is included with this letter as Attachment 5. It provides information on where and how to review the Draft EIS, the public hearings schedule, and on how to submit comments on the Draft EIS.

Please let us know if you would like to engage in government-to-government consultation for the Sentinel Project. We will be happy to accommodate an in-person and/or virtual meeting to further discuss the Project, answer questions, or provide clarification. The point of contact for this effort is Ms. Pamela Miller, Air Force Cultural Resources and Tribal Relations Lead, who can be reached at (719) 510-6773 or pamela.miller.7@us.af.mil. The Air Force is looking forward to your response and to working with your Tribe. Thank you in advance for your assistance in this effort.

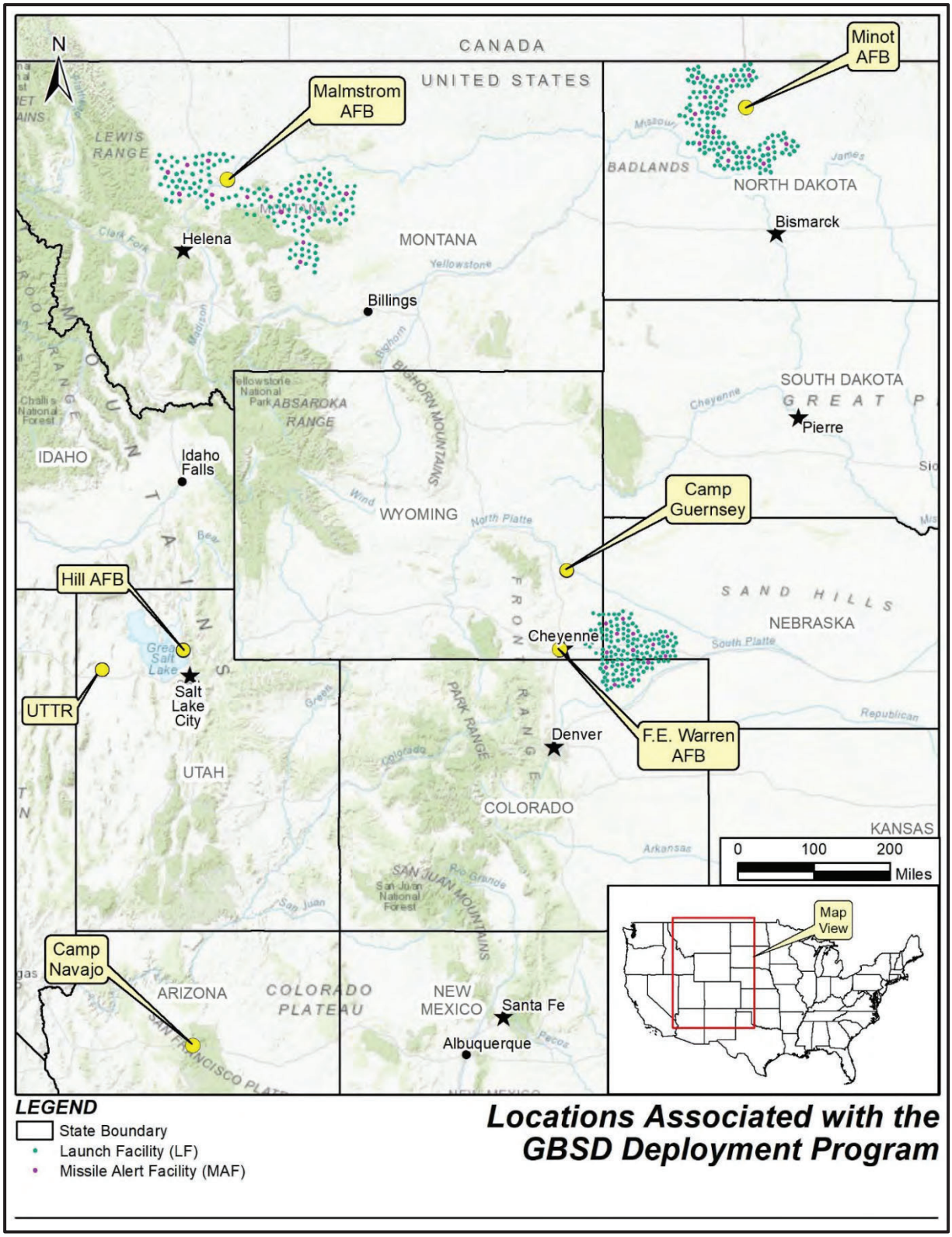
Sincerely

HART.BETH.A.1244107997 Digitally signed by HART.BETH.A.1244107997 Date: 2022.08.10 11:57:24 -05'00'

BETH A. HART, GS-15, DAF
Division Chief, Site Activation Task Force

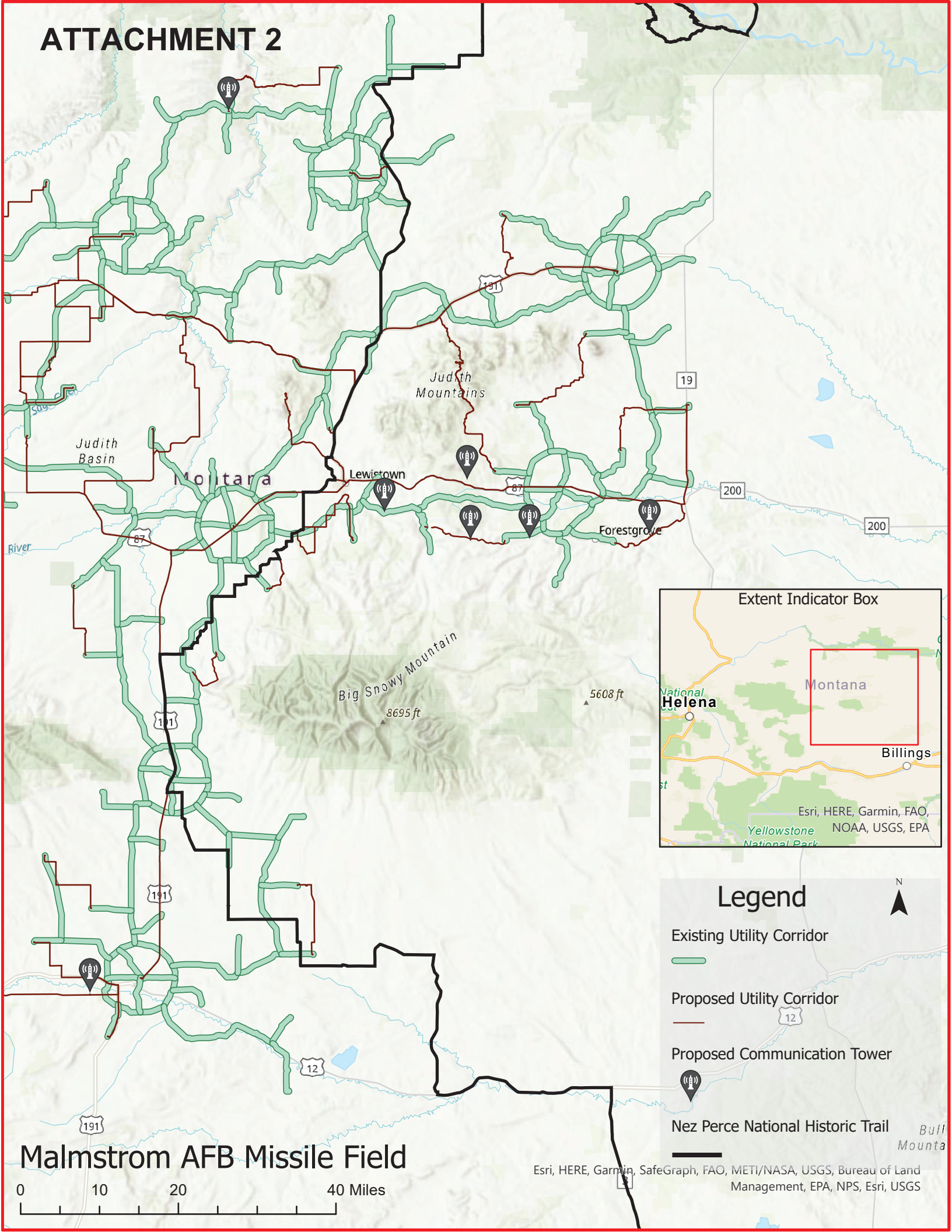
5 Attachments:
1. Map of Locations Associated with the Sentinel (GBSD) Deployment Program
2. Nez Perce National Historic Trail Location within the Project Area
3. Tribal Consultation and Involvement
4. Sentinel/GBSD Tribal Project Presentation
5. Draft EIS Notice of Availability

ATTACHMENT 1
PROJECT AREA MAP



ATTACHMENT 2
NEZ PERCE NATIONAL HISTORIC TRAIL LOCATION WITHIN THE PROJECT AREA

ATTACHMENT 2



Malmstrom AFB Missile Field

ATTACHMENT 3
TRIBAL CONSULTATION AND INVOLVEMENT

ENVIRONMENTAL IMPACT STATEMENT FOR THE SENTINEL/GROUND BASED STRATEGIC DETERRENT DEPLOYMENT AND MINUTEMAN III DECOMMISSIONING AND DISPOSAL

TRIBAL CONSULTATION AND INVOLVEMENT

Air Force Global Strike Command
Barksdale Air Force Base, Louisiana

Involved Tribes

Extensive consultation with 60 federally recognized Tribes is occurring under Sentinel/GBSD for both the Environmental Impact Statement (EIS) and National Historic Preservation Act Section 106 compliance processes. Of these Tribes, six have declined consultation, 38 have requested continuing consultation, and 16 have not yet responded. The Air Force continues to consult with all Tribes but the six who declined. A list of the 60 Tribes included in these compliance processes follows.

Sixty Federally Recognized Tribes	
Apache Tribe of Oklahoma	Northern Arapaho Tribe
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation	Northern Cheyenne Tribe
Blackfeet Tribe of the Blackfeet Indian Reservation	Northwestern Band of the Shoshone Nation
Bois Forte Band of Chippewa	Oglala Sioux Tribe
Cheyenne and Arapaho Tribes of Oklahoma	Paiute Indian Tribe of Utah
Cheyenne River Sioux Tribe	Pawnee Nation
Chippewa Cree Tribe of the Rocky Boy's Reservation	Prairie Island Indian Community
Comanche Nation of Oklahoma	Pueblo of Taos
Confederated Salish and Kootenai Tribes of the Flathead Reservation	Pueblo of Zuni
Confederated Tribes of the Goshute Reservation	Red Lake Band of Chippewa Indians
Crow Creek Sioux Tribe	Rosebud Sioux Tribe
Crow Tribe	San Juan Southern Paiute Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation	Santee Sioux Nation
Eastern Shoshone Tribe of the Wind River Reservation	Shakopee Mdewakanton Sioux Community
Ely Shoshone Tribe of Nevada	Shoshone-Bannock Tribes of the Fort Hall Reservation
Flandreau Santee Sioux Tribe	Shoshone-Paiute Tribes of the Duck Valley Reservation
Fond du Lac Band of Lake Superior Chippewa	Sisseton-Wahpeton Oyate
Fort Belknap Indian Community	Skull Valley Band of Goshute Indians
Fort Sill Apache Tribe	Southern Ute Indian Tribe
Grand Portage Band of Lake Superior Chippewa	Spirit Lake Nation
Hopi Tribe	Standing Rock Sioux Tribe
Jicarilla Apache Tribe	Te-Moak Tribe of Western Shoshone Indians
Kiowa Tribe	Te-Moak Tribe of Western Shoshone Indians -- Wells Band of Western Shoshone
Leech Lake Band of Ojibwe	Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Little Shell Tribe of Chippewa Indians	Turtle Mountain Band of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation	Upper Sioux Indian Community
Lower Sioux Indian Community	Ute Indian Tribe of the Uintah & Ouray Reservation
Mescalero Apache Tribe	Ute Mountain Ute Tribe
Mille Lacs Band of Ojibwe	White Earth Nation of Minnesota Chippewa
Navajo Nation	Yankton Sioux Tribe

Consultation Efforts

The Air Force maintains continuing communication with the Tribes through letters, emails, meetings, and telephone calls. These methods of consultation will continue throughout the life of the Sentinel/GBSD Deployment action (2036). Specific consultation efforts that have been conducted so far include:

- May 2020 – initiated consultation with all 60 Tribes.
- July 2020 – invited the Tribes to participate in virtual tribal scoping meetings regarding the EIS.
- August - October 2020 – conducted 13 virtual tribal scoping meetings.
- Scoping comments received from Tribes addressed these topics: the Proposed Action or alternatives, the NEPA process, cultural and historic resources, hazardous materials and waste, and health and safety.
- December 2020 – initiated consultation with the Tribes regarding the methods to be used to identify and evaluate cultural resources for the GBSD Project, for inclusion in Project cultural resources survey plans.
- January 2021 – conducted six virtual tribal meetings to discuss their concerns and input for the cultural resources survey plans.
- March 2021 – distributed draft survey plans to the Tribes for review and comment.
- April - June 2021 – conducted five virtual tribal meetings to discuss the Tribes' review of the draft survey plans and tribal participation in cultural resources identification efforts for the GBSD Project.
- July 2021 – provided information regarding opportunities for Tribes to participate in field research and surveys schedule for Fall 2021 and conducted two virtual tribal meetings to discuss.
- August 2021 – conducted field research visits to Malmstrom and Minot AFBs missile fields with tribal participation. The research visit to the F.E. Warren AFB missile field was delayed until Spring 2022, in consultation with the Tribes.
- September - October 2021 – conducted full Phase I field surveys of utility corridors located on lands administered by federal agencies within all three missile fields, with tribal participation.
- September - November 2021 – provided revised survey plans for the four installations.
- October 2021 – initiated the process to develop the GBSD Programmatic Agreement.
- November 2021 – conducted two virtual meetings with Tribes to discuss initiating development of the Programmatic Agreement. Invited the Tribes to four in-person meetings to be held in February-March 2022 to consult on the Programmatic Agreement.
- December 2021 to Present - development of the Programmatic Agreement that will commit how the Air Force will follow the Section 106 process for the Sentinel/GBSD Project.

ATTACHMENT 4
SENTINEL/GBSD TRIBAL PRESENTATION

Overview of Sentinel Deployment and Minuteman III Decommissioning and Disposal

(formerly Ground Based Strategic Deterrent - GBSD)

Project Proponents

- Air Force Global Strike Command, *Barksdale Air Force Base (AFB), LA*
  - GBSD Proponent
- Air Force Nuclear Weapons Center, *Kirtland AFB, NM*
  - GBSD Program Management
- GBSD Systems Directorate, *Hill AFB, UT*
  - GBSD NEPA Management and GBSD Deployment
- U.S. Army Space and Missile Defense Command, *Huntsville, AL*
  - Contract Management
- Air Force Civil Engineer Center, *San Antonio, TX*
  - NEPA and Cultural Resources Submit Matter Expertise

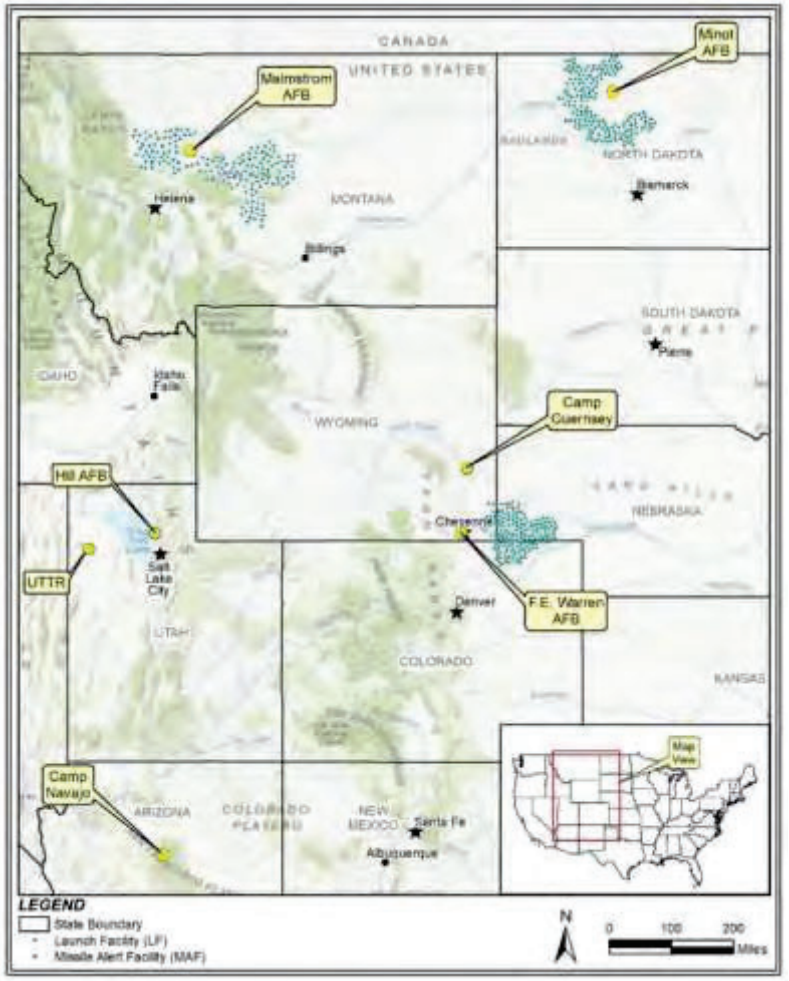
Sentinel Overview

- GBSD is the weapon system proposed to replace the aging Minuteman III ICBM system.
- It represents the modernization of the ground-based leg of the U.S. nuclear triad and would extend its capabilities through 2075.
- It is the most cost-effective option for maintaining the ground-based leg of the nuclear triad in a safe, secure, and effective manner.

Sentinel Locations

Deployment Locations
Francis E. Warren AFB, WY
Malmstrom AFB, MT
Minot AFB, ND

Support Locations
Hill AFB, UT
Utah Test and Training Range (UTTR), UT
Camp Guernsey, WY
Camp Navajo, AZ



Proposed Action

- **Off-base:** Replace all Minuteman III ICBMs deployed at F.E. Warren AFB, Malmstrom AFB, and Minot AFB, missile fields with the GBSD system; construct new and renovate existing utility corridors as needed; and construct communication towers.
- **On-base:** Construct or modify facilities and infrastructure as necessary to support GBSD maintenance, training, storage, testing, and support at F.E. Warren AFB, Malmstrom AFB, and Minot AFB, Hill AFB, UTTR, and Camp Guernsey.
- **Decommissioning and disposal:** Remove, decommission, and dispose of the Minuteman III weapons system at F.E. Warren AFB, Malmstrom AFB, Minot AFB, Hill AFB, UTTR, and Camp Navajo.

Proposed Action Elements at Each Installation

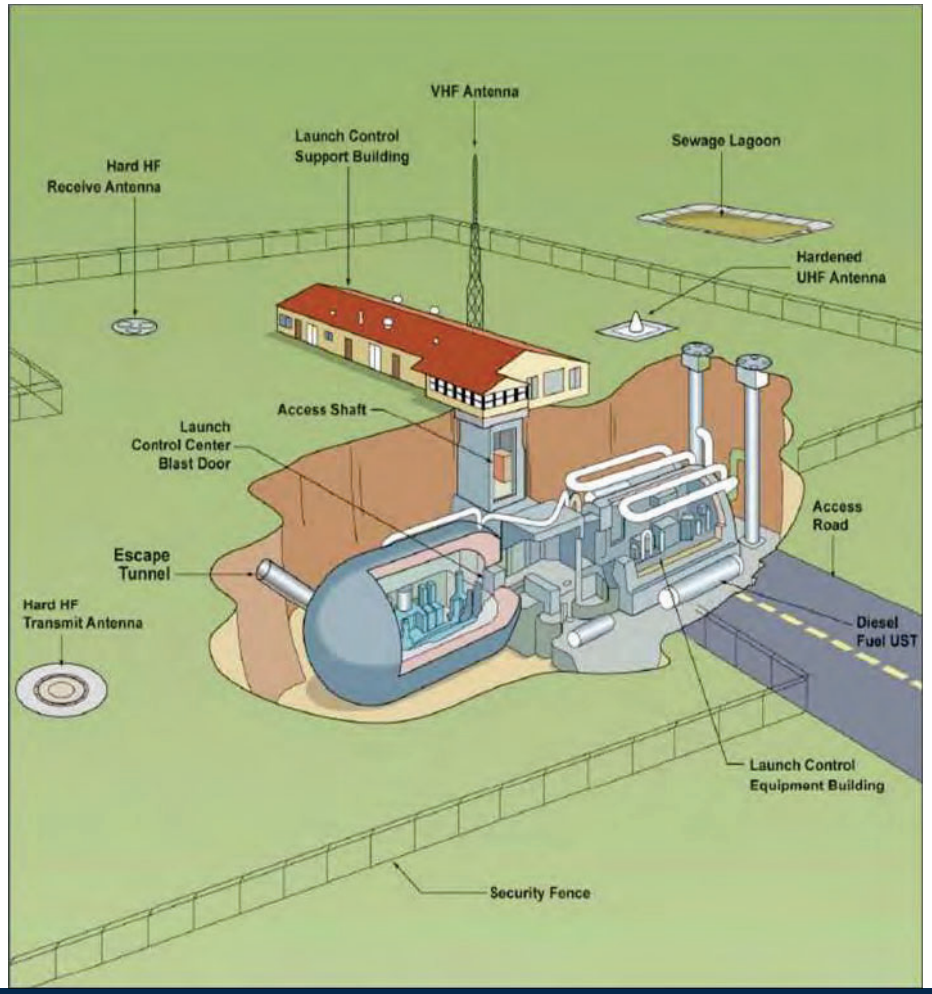
Location	On-base elements of the GBSD deployment	Off-base elements of the GBSD deployment	Decommissioning and disposal of the Minuteman III weapons system
F.E. Warren AFB	•	•	•
Malmstrom AFB	•	•	•
Minot AFB	•	•	•
Hill AFB	•		•
UTTR	•		•
Camp Guernsey	•		
Camp Navajo			•

Proposed Off-Base Actions

- Modernize missile alert facilities, launch facilities, and launch control centers in each missile field.
- Establish new utility corridors and communication towers in the missile fields to increase system redundancy.
- Upgrade existing utility corridors as needed.
- Establish temporary workforce hubs and centralized staging areas.
- Begin construction in the mid-2020s and complete it by the mid-2030s.

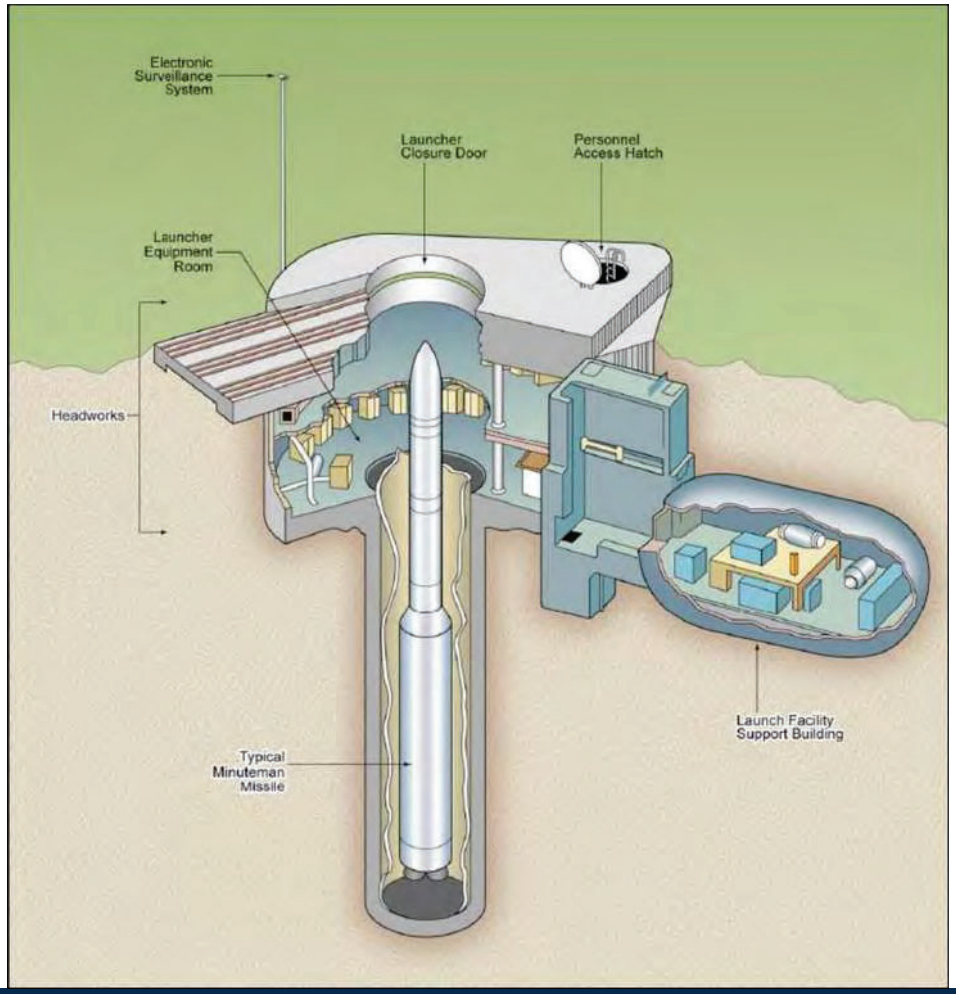
Missile Alert Facility and Launch Control Center

- 15 per missile field.
- Up to 8 per missile field would be made like new.
- Remainder would be decommissioned or repurposed.
- Configuration varies.



Launch Facility

- 150 per missile field.
- All would be made like new.
- Configuration varies.



Proposed Utility Corridors

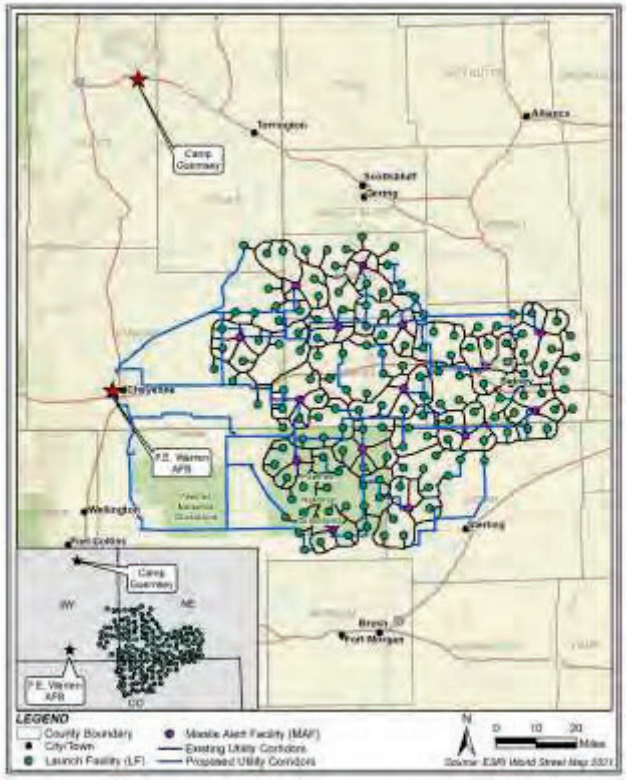
- The Project includes:

1) 3,100 miles of new utility corridor throughout the three missile fields
   - 900 miles at F.E. Warren AFB.
   - 1,250 miles at Malmstrom AFB.
   - 920 miles at Minot AFB.

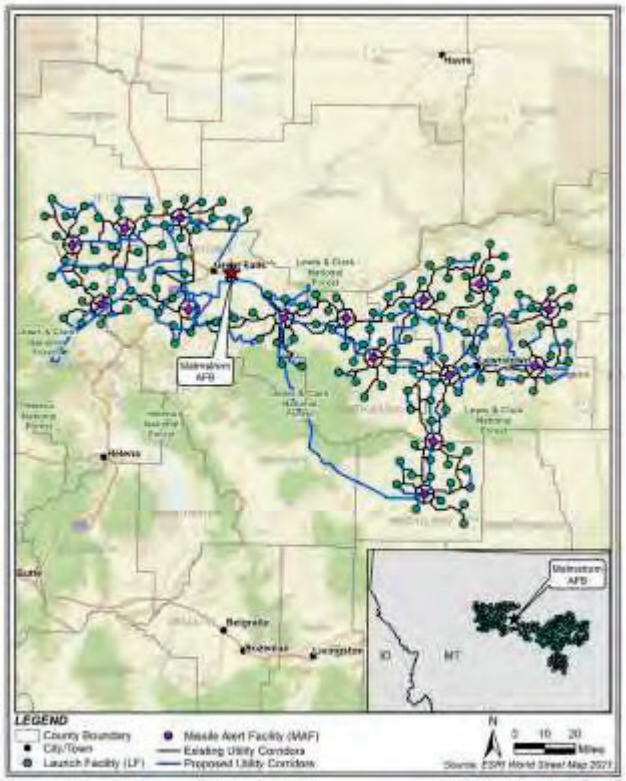
2) Installation of new utility components on existing aboveground infrastructure (e.g., existing utility poles) that currently follow the same routes as the proposed new utility corridors.

Proposed Utility Corridors (con't)

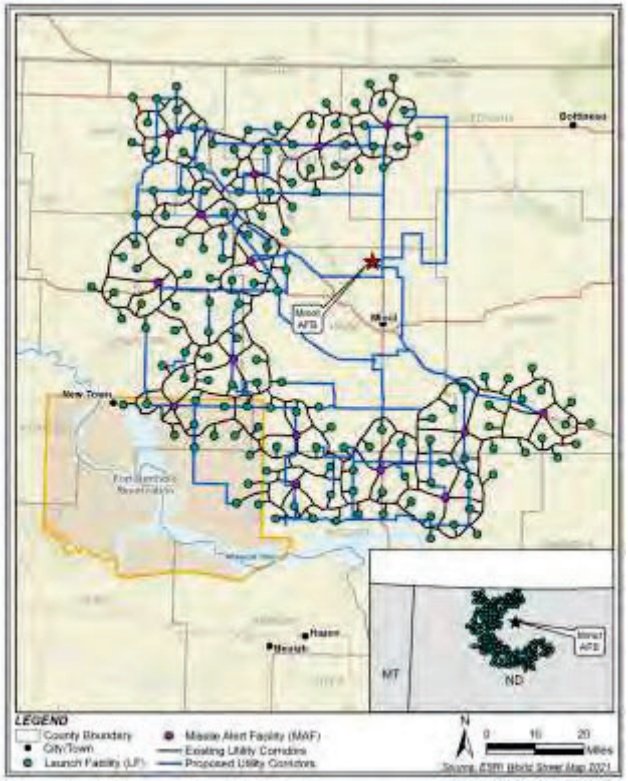
3) Removal, replacement, and addition of utility components to the existing utility corridors throughout the three missile fields, as needed.
   - 1,611 miles of existing corridor in the F.E. Warren AFB missile field.
   - 1,751 miles of existing corridor in the Malmstrom AFB missile field.
   - 1,531 miles of existing corridor in the Minot AFB missile field.
   - Activities would be the same as with the new utility corridors, including clearing and grubbing to provide access to the area; installation and maintenance of erosion control devices; trenching; and reseeding and restoration, as appropriate.



- Proposed Utility Corridor Actions at F.E. Warren AFB
  - 900 miles of new utility corridors
  - Work within 1,611 miles of existing utility corridors



- Proposed Utility Corridor Actions at Malmstrom AFB
  - 1,250 miles of new utility corridors
  - Work within 1,751 miles of existing utility corridors



- Proposed Utility Corridor Actions at Minot AFB
  - 920 miles of new utility corridors
  - Work within 1,531 miles of existing utility corridors

Utility Corridors

Agency	Proposed Action	
	New Corridors	Existing (MMIII)
Fort Berthold Indian Reservation	56.2 miles	88.0 miles
U.S. Forest Service	74.7 miles	55.2 miles
U.S. Fish and Wildlife Service	15.8 miles*	21.4 miles
Bureau of Land Management	18.7 miles	21.3 miles
Bureau of Reclamation	3.2 miles	5.3 miles
U.S. Army Corps of Engineers	2.1 miles	5.4 miles

*USFWS is owned property only. There are 86.6 miles in the Proposed Action and 147.8 miles in the Proposed Action affecting easements.

Proposed Utility Corridors Construction

- Air Force would employ a commonsense approach to utility corridor siting, including avoidance and minimization of impacts.
- Utility corridors would require trenching to a depth of 4–8 feet and approximately 2 feet wide.
- Directional drilling would be used where necessary, such as to install utility lines beneath roadways and stream crossings.

Proposed Communication Towers

- Approximately 62 communication towers would be constructed within the three missile fields (18 at F.E. Warren AFB, 31 at Malmstrom AFB, and 13 at Minot AFB).
- Towers would be either lattice structures or masts, would be 300 feet in height, and require guy wires.
- Tower sites would be approximately 5 acres in size and generally be located near existing roads and utilities.

Selection Criteria for Workforce Hubs and Staging Areas

Site Selection

- Coordinate with city and county officials before selecting sites
- Acquire permits as necessary to meet all local zoning requirements
- Comply fully with local planning requirements and plans
- Locate in areas without sensitive resources
- Established in accordance with the OSHA Section 1910.142, Subpart J – Temporary Labor Camps.
- Following construction facilities would be closed, removed, and restored

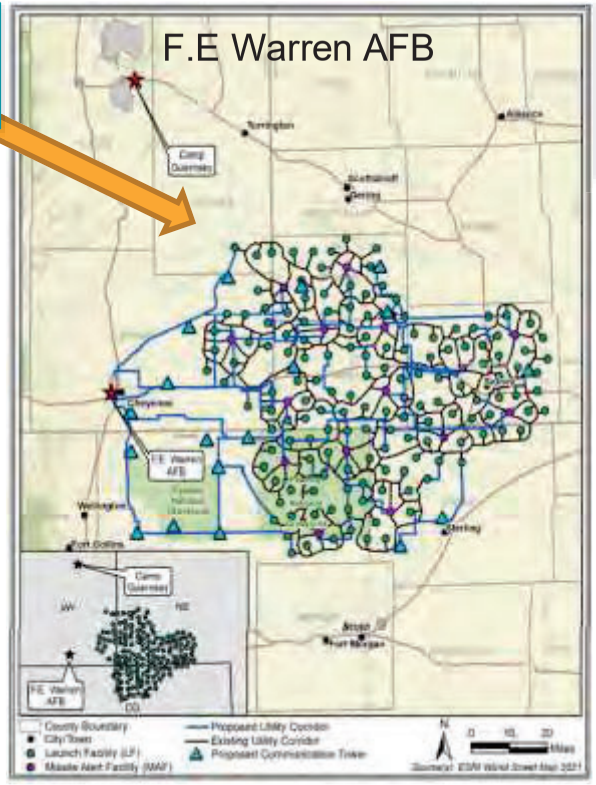
Personnel

- Prepare and maintain a site-specific Public Health and Safety Plan
- Conduct regular Public Health and Safety briefings
- Maintain and enforce written security policies and protocols
- Hire on-site security personnel, as necessary
- Background checks for all temporary construction workers
- Zero tolerance policies for noncompliance with local ordinances

Overview of Sentinel Deployment and Minuteman III Decommissioning and Disposal

Off-Base Construction

- 15 Missile Alert Facilities
- 150 Launch Facilities
- 18 Communication Towers
- 900 Miles of New and 1611 Miles of Existing Utility Corridors



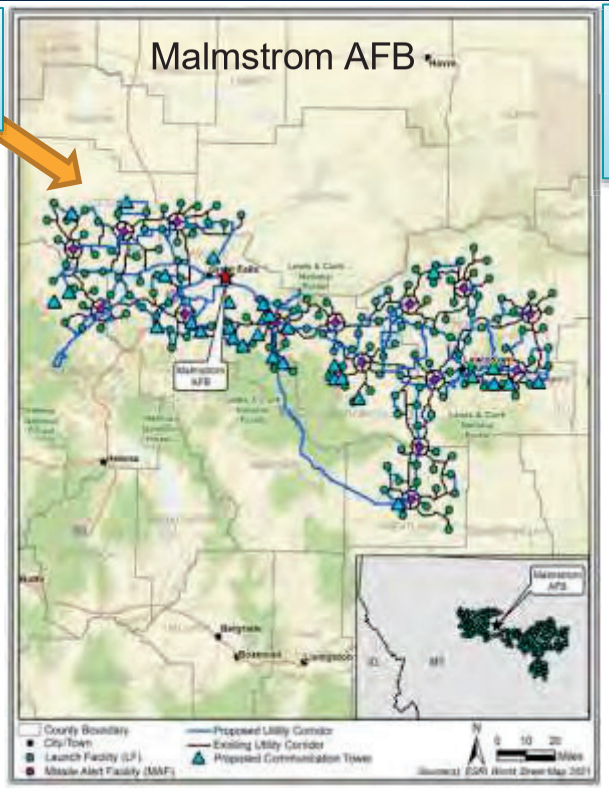
Temporary Workforce Hubs & Laydown Areas

- 1 workforce hub with 2,500 to 3,000 employees
  - Kimball, NE
- 4 laydown/ staging areas
  - Albin, WY
  - Kimball, NE
  - Sidney, NE
  - Stoneham, CO
- In place 3 to 5 years

Overview of Sentinel Deployment and Minuteman III Decommissioning and Disposal

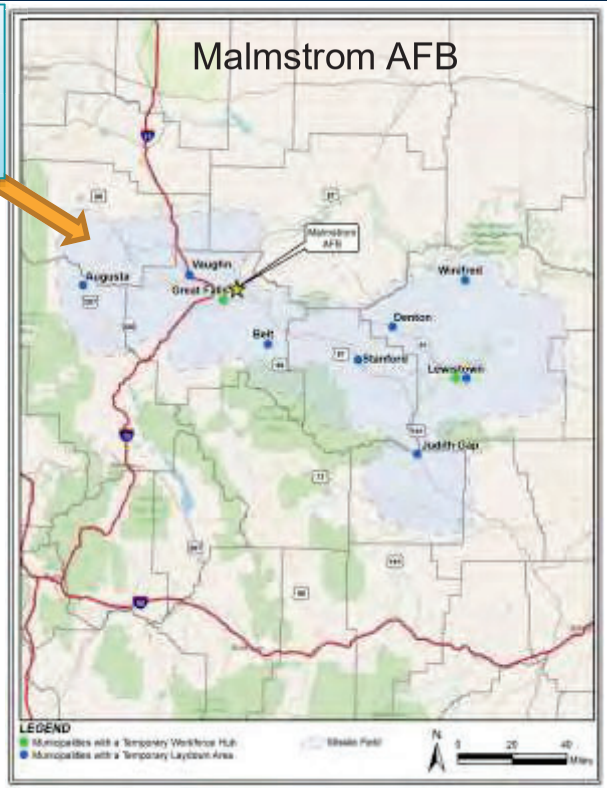
Off-Base Construction

- 15 Missile Alert Facilities
- 150 Launch Facilities
- 31 Communication Towers
- 1250 Miles of New and 1751 Miles of Existing Utility Corridors



Temporary Workforce Hubs & Laydown Areas

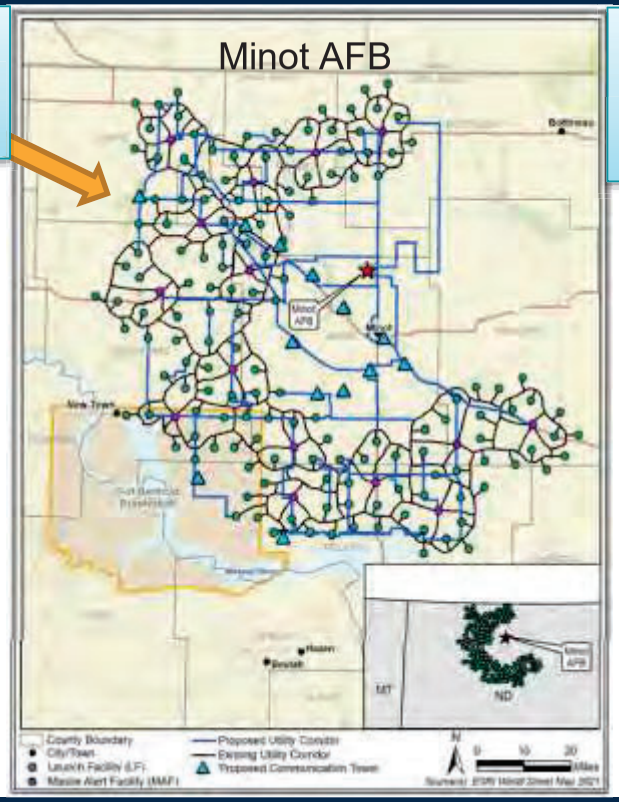
- 2 workforce hubs with 2,500 to 3,000 employees
  - Great Falls, MT
  - Lewistown, MT
- 8 laydown/staging areas
  - Augusta, MT
  - Vaughn, MT
  - Belt, MT
  - Stanford, MT
  - Denton, MT
  - Lewiston, MT
  - Judith Gap, MT
  - Winifred, MT
- In place 3 to 5 years



Overview of Sentinel Deployment and Minuteman III Decommissioning and Disposal

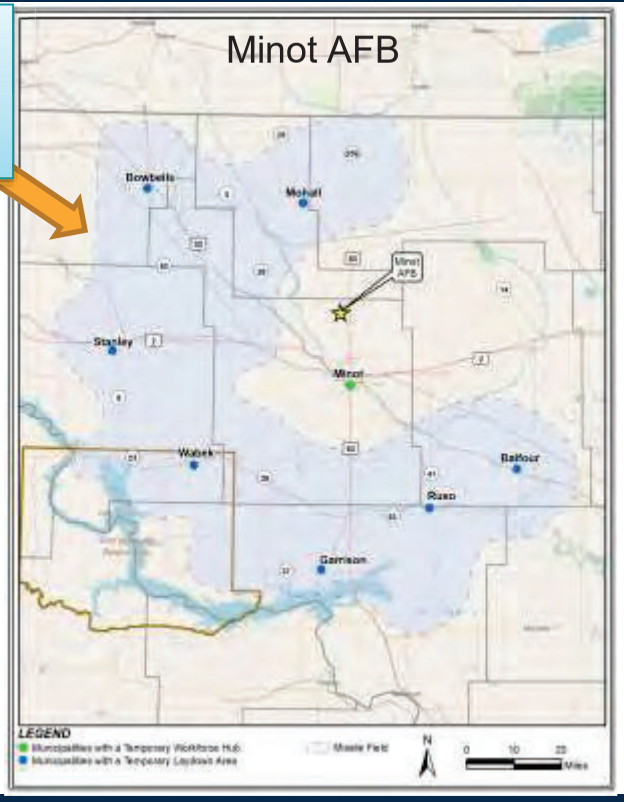
Off-Base Construction

- 15 Missile Alert Facilities
- 150 Launch Facilities
- 13 Communication Towers
- 920 Miles of New and 1531 Miles of Existing Utility Corridors



Temporary Workforce Hubs & Laydown Areas

- 1 workforce hub with 2,500 to 3,000 employees
  - Minot, ND
- 7 laydown/staging areas
  - Bowbells, ND
  - Mohall, ND
  - Stanley, ND
  - Wabek, ND
  - Garrison, ND
  - Ruso, ND
  - Balfour, ND
- In place 3 to 5 years

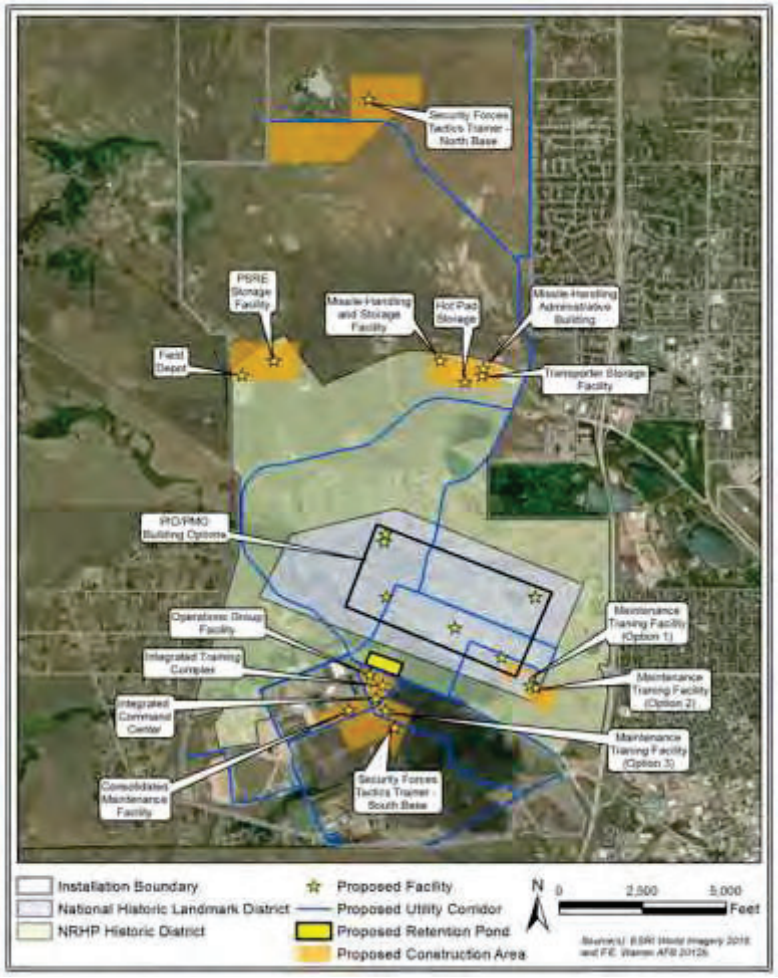


Proposed On-Base Actions

- Construct and modify on-base facilities and infrastructure as needed to support:
  - Sentinel command, communications, maintenance, training, and storage at F.E. Warren AFB, Malmstrom AFB, and Minot AFB.
  - Sentinel maintenance, training, storage, and testing facilities at Hill AFB, UTTR, and Camp Guernsey.

On-Base Construction at F.E. Warren AFB and Camp Guernsey

F.E. Warren is home to the 90th Missile Wing. On-base actions at F.E. Warren AFB and Camp Guernsey would include new construction and renovation to support GBSD command, communications, maintenance, training, and storage facilities.



On-Base Construction at Malmstrom AFB

Malmstrom AFB is home to the 341st Missile Wing. On-base actions at Malmstrom AFB would include new construction and renovation to support GBSD command, communications, maintenance, training, and storage facilities.

On-Base Construction at Minot AFB

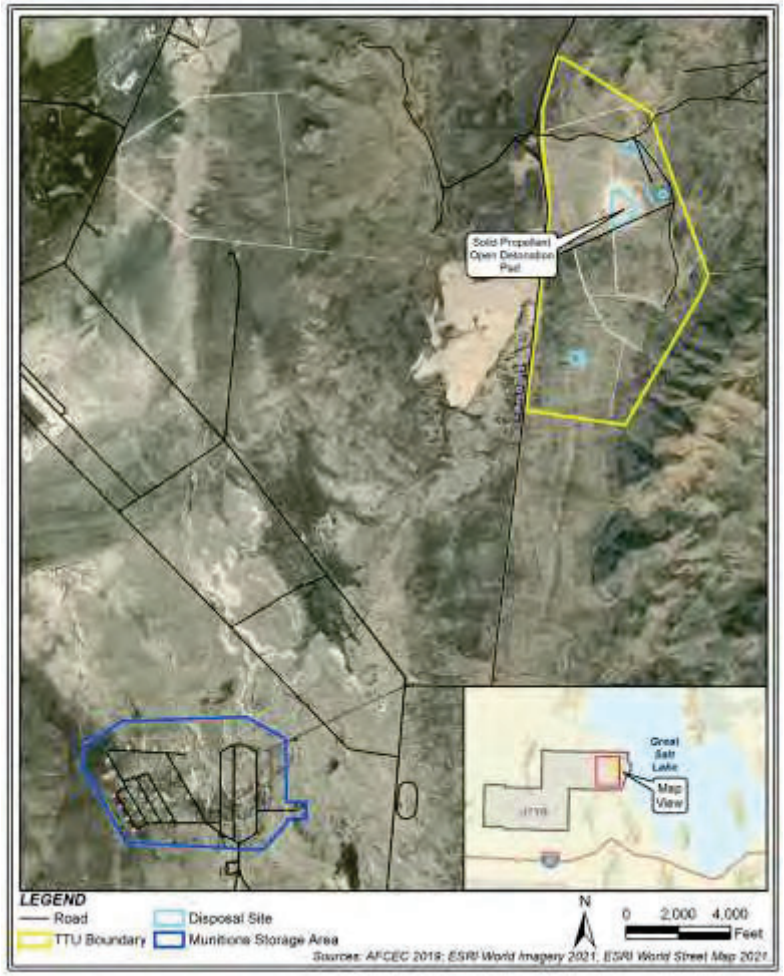
Minot AFB is home of the 91st Missile Wing. On-base actions at Minot AFB would include new construction and renovation to support GBSD command, communications, maintenance, training, and storage facilities.

On-Base Construction at Hill AFB

On-base actions at Hill AFB would include new construction and renovation to support GBSD maintenance, storage, and training support facilities.

On-Base Construction at UTTR

On-base actions at UTTR would include construction of new storage facilities at the Munitions Storage Area and disposal of Minuteman III missile components at UTTR's Thermal Treatment Unit (TTU).



Sentinel Consultation Efforts

- Consultation with Tribes, SHPOs, and other Federal Agencies began in May 2020
- Survey and Work Plans outlined standard methods for field work, identification and evaluation of sites, reporting, etc.
- Participation of Tribal Cultural Specialists (TCS)
- Development of GBSD Programmatic Agreement

Consulting Parties include:

7 SHPOs
1 THPO
54 Tribes
9 Federal Agencies
National Historic Landmarks and National Trials Programs
15 Other Consulting Parties

23 Tribal Nations Visited

2021 Survey and Investigation Activities

- Conducted biological and wetland surveys of 492 miles for new utility corridors (17% of total new corridors)
- Conducted field inspections of 1,648 miles of new utility corridors on non-federal lands
- Conducted 2 one-week fieldwork sessions for Traditional Cultural Specialists (TCSs) in the Malmstrom and Minot missile fields. Pre-survey field research, similar to Class I records search, to assist in the familiarization with the entirety of each missile field and enable the TCSs to conduct broader area inspections and gather data to discuss with their Tribe
- Conducted formal cultural resources survey and site recording with Tribal Cultural Specialists (TCSs) of project areas at all three missile fields that are located on lands controlled by other federal agencies

Overview of Sentinel Deployment and Minuteman III Decommissioning and Disposal

Malmstrom AFB Missile Field

528 acres surveyed Sept 15-20, 2021

- Utility corridors on Bureau of Land Management, Bureau of Reclamation, and Helena-Lewis and Clark National Forest
- Survey Team: 6 archaeologists and 11 Tribal Cultural Specialists from 5 Tribes (Blackfeet, Cheyenne River Sioux, Little Shell Chippewa, Northern Arapaho, and Rosebud Sioux)
- 37 sites and 7 isolated finds: included ditches, canals, dam, roads, railroads, homesteads, kilns, powerlines, dumps, trash scatters, prospecting trenches/pits, one identified Tribally significant property, rock cairns, possible burials, stone rings, culturally modified trees

Minot AFB Missile Field

301 acres surveyed Sept 29 – Oct 4, 2021

- Utility corridors on U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers.
- Survey Team: 6 archaeologists and 11 Tribal Cultural Specialists from 8 Tribes (Blackfeet, Cheyenne River Sioux, Fort Belknap Assiniboine and Gros Ventre, Little Shell Chippewa, Northern Arapaho, Oglala Sioux, Rosebud Sioux, and Standing Rock Sioux)
- 17 sites and 2 isolated finds: included a bridge, road, ramp, spillway, ditch, dam, parsonage, rock features and alignments, cairns, and lithic scatters

F.E. Warren AFB Missile Field

404 acres surveyed Oct 14-19, 2021

- Utility corridors on U.S. Forest Service as Pawnee National Grassland.
- Survey Team: 6 archaeologists and 11 Tribal Cultural Specialists from 8 Tribes (Blackfeet, Cheyenne River Sioux, Fort Belknap Assiniboine and Gros Ventre, Northern Arapaho, Oglala Sioux, Pawnee, Rosebud Sioux, and Standing Rock Sioux)
- 15 sites and 7 isolated finds: included homesteads, ditch, trash scatters, lithic scatters

Programmatic Agreement – Full Tribal Involvement

- Development of Sentinel Programmatic Agreement
  - 4 in-person meetings held in Feb/Mar 2022
  - Preliminary Draft PA with Recitals and Annotated Outline sent 29 Mar 2022 for 30 day review and comment period
  - 2 virtual meetings scheduled for 25 and 27 Apr 2022
  - Second Draft PA with Stipulations sent 1 Jun 2022 for 30 day review and comment period
  - 4 in-person meetings in June 2022
  - Third Draft PA scheduled to be sent to all consulting parties on 5 August 2022

Initial in-person meetings included:
18 Tribal Nations
6 SHPO Offices
1 THPO Office
5 Federal Agencies
4 Other Consulting Parties
Air Force personnel
Contractor support

Tribal EIS Briefings held on 6 and 13 June 2022 (virtual)

Establishing Tribal Consultation Protocols for the PA

- Federal recognition of Nation-to-Nation consultation requirements and Tribal knowledge/expertise
- ACHP Guidance and Information Papers Related to Federal-Tribal Coordination
- Procedural Protocols - The basic tenets within which Tribal consultation shall be initiated and conducted
- Cultural Understanding Protocols - Achieving meaningful and effective Tribal consultation
- Behavioral Protocols - Effective and respectful communication and contributions

Programmatic Agreement Development Schedule

Proposed Schedule:

- November 2021 – virtual meetings
- February 2022 – in-person meetings
- March 2022 – distribute Preliminary Draft PA (recitals and annotated outline)
- April 2022 – virtual meetings
- June 2022 – distribute 2nd Draft PA
- June/July 2022 – in-person meetings
- August 2022 – distribute 3rd Draft PA
- September 2022 – virtual meetings
- November 2022 – distribute Final PA for signatures
- December 2022 – acquire ACHP signature

Thank You

ATTACHMENT 5
DRAFT ENVIRONMENTAL IMPACT STATEMENT
NOTICE OF AVAILABLITY

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

July 1, 2022

Howard N. Kosht, GS-15, DAF
Reply to: GBSD Project EIS
10306 Eaton Place, Suite 340
Fairfax, VA 22030

Dear Stakeholder

Pursuant to the National Environmental Policy Act of 1969 (NEPA) (Title 42 *United States Code* § 4321); the Council on Environmental Quality regulations for implementing NEPA (Title 40 *Code of Federal Regulations* [CFR] Parts 1500–1508); and the Air Force Environmental Impact Analysis Process (EIAP) as codified in 32 CFR Part 989, the Air Force has prepared a Draft Environmental Impact Statement (EIS) for public review that analyzes the potential environmental consequences associated with the proposed deployment of the Ground Based Strategic Deterrent (GBSD) Intercontinental Ballistic Missile (ICBM) weapons system, called Sentinel, and decommissioning and disposal of the aging Minuteman III ICBM weapons system. The Bureau of Indian Affairs, Bureau of Land Management, Bureau of Reclamation, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, U.S. Forest Service, and Wyoming Army National Guard are cooperating agencies for the EIS.

The purpose of the Proposed Action is to replace all land-based Minuteman III missiles deployed in the continental U.S. with the technologically advanced GBSD system. The Proposed Action is needed to meet national security requirements and to comply with the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Publ. L. 115-232 § 1663, 132 Stat. 2153), which directs the Air Force to develop and implement a strategy "to accelerate the development, procurement, and fielding of the ground based strategic deterrent program."

In addition to replacing all land-based Minuteman III ICBMs with the GBSD ICBMs, all launch facilities, communication systems, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. Decommissioning and disposal activities would include destruction of all Minuteman III weapon systems and associated components to prevent their further use for their originally intended purpose. While certain components and subsystems of the Minuteman III have been upgraded, most of the fundamental infrastructure used today is the nearly 50-year-old original equipment. The Proposed Action would not include generating or disposing of nuclear material, and the number of land-based nuclear missiles would remain unchanged. The nuclear warheads from the Minuteman III system would be used for the GBSD system. Deployment of the GBSD system would begin in the mid-2020s, extending the capabilities of the land-based leg of the U.S. nuclear triad through at least 2075.

Both on- and off-base construction and operational activities would take place at Francis E. Warren (F.E.) Air Force Base (AFB), WY, Malmstrom AFB, MT, and Minot AFB, ND, and throughout the missile fields. Additional construction, maintenance, training, storage, testing, support, decommissioning, and disposal actions would occur at Hill AFB, UT; the Utah Test and Training Range, UT; Camp Guernsey, WY; and Camp Navajo, AZ. Deployment of the GBSD system would begin in 2023 at F.E. Warren AFB, and be implemented at Malmstrom AFB and Minot AFB over the next 15 years. The proposed GBSD deployment activities would include the construction and renovation of

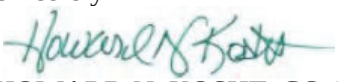
approximately 1,569,000 square feet of on-base facilities, and the refurbishment of all 450 launch facilities and 45 missile alert facilities, construction of 62 new communication towers on newly acquired properties, the establishment of approximately 3,100 miles of new utility corridors, and the potential to conduct utility work within the nearly 5,000 miles of existing utility easements throughout the missile fields of F.E. Warren, Malmstrom, and Minot AFBs. During construction, a workforce hub would be established in or near Great Falls and Lewistown, MT, Kimball, NE, and Minot, ND, housing up to 3,000 temporary workers and support personnel each, and 19 centralized construction laydown areas would be established in or near Stoneham, CO; Augusta, Belt, Denton, Judith Gap, Lewistown, Stanford, Vaughn, and Winifred, MT; Kimball and Sydney, NE; Balfour, Bowbells, Garrison, Mohall, Ruso, Stanley, and Wabek, ND; and Albin, WY. While there would be no construction at Camp Navajo, the proposed GBSD deployment activities would include use of the existing missile storage area during Minuteman III decommissioning and disposal activities.

The EIS evaluates two alternatives to the Proposed Action, the Reduced Utility Corridors Alternative and the No Action Alternative (as required by NEPA). The Reduced Utility Corridors Alternative would replace all land-based Minuteman III ICBMs deployed in the continental United States with GBSD ICBMs, as would the Proposed Action. And, while it includes most of the elements of the Proposed Action, it also proposes establishing appreciably fewer miles of new utility corridors and reutilizing marginally fewer miles of existing utility corridors. Under the No Action Alternative, the Air Force would continue to maintain and operate the Minuteman III weapon system in its current configuration, and the GBSD weapon system would not be deployed.

The public comment period for the GBSD EIS begins with publication of the Notice of Availability (NOA) in the *Federal Register* on or about July 1, 2022. Advertisements will be published in local newspapers notifying the public of the EIS comment period and the 7 regional in-person and 2 virtual public hearings. See the included flyer for additional information on the hearings and how to obtain or where to review the Draft EIS. The Draft EIS and all materials that will be presented at the public hearings are available for review on the project website at www.gbsdeis.com. On the website, you will find information about the locations and registration procedures for all public hearings. The website will become accessible the day the NOA is published.

To ensure a thorough review of the analysis in the Draft EIS, the Air Force is soliciting comments from interested local, state, and federal agencies and organizations; Native American Tribes; and members of the public. Comments on the Draft EIS may be submitted in a variety of ways to include orally at the in-person and virtual public hearings or in writing at in-person public hearings, through the project website at www.gbsdeis.com; via email to gbsdeis@tetratech.com; or by mail to: GBSD Project EIS, 10306 Eaton Place, Suite 340, Fairfax, VA, 22030. The Air Force requests that comments on the Draft EIS be submitted within 45 days of the publication of the NOA to ensure they are considered by the Air Force for the Final EIS. If you are unable to access the website or would like to request printed or digital copies of materials, please send an email to gbsdeis@tetratech.com.

Sincerely



HOWARD N. KOSHT, GS-15, DAF
Executive Director, Strategic Plans, Programs, and Requirements

Public Hearings and Providing Comments on the
Draft Environmental Impact Statement for the Proposed Ground Based
Strategic Deterrent Deployment and Minuteman III Decommissioning and Disposal

The public is invited to review and comment on the Air Force's Draft Environmental Impact Statement (EIS) for the proposed Ground Based Strategic Deterrent (GBSD) Deployment and Minuteman III Decommissioning and Disposal.

Where to Obtain the Draft EIS

The Draft EIS is available for review and download at www.gbsdeis.com. An electronic copy may be requested by calling (307) 773-3400 or emailing gbsdeis@tetratech.com. It may also be reviewed at the at the following public libraries:

Fort Berthold Library	Minot Public Library	Kimball Public Library	Laramie County Library	Great Falls Public Library	Lewistown Public Library
220 8th Ave E New Town, ND 58763	516 2nd St Ave SW Minot, ND 58701	208 S Walnut St. Kimball, NE 69145	2200 Pioneer Ave. Cheyenne, WY 82001	301 2nd Ave. N Great Falls, MT 59401	701 W Main St. Lewistown, MT 59457

Public Hearing Information

The Air Force is holding two virtual and seven regionally-based in-person public hearings to provide information about the proposed project and to accept comments on the draft EIS. All members of the public are encouraged to attend as your input will assist the Air Force in making more informed decisions. The public hearings will include (1) opening remarks by Air Force Global Strike Command (AFGSC); (2) a pre-recorded presentation outlining the scope of the proposed GBSD project and the findings of the Draft EIS; and (3) an opportunity for attendees to provide oral and/or written comments. The presentation at in-person hearings will begin 30 minutes after the start time, formal public testimony will begin approximately one hour later, and the hearing venue will close 3 hours after the start time. Oral comments will be limited to 3 minutes for all public hearings. Comments of considerable length can be submitted in writing through the project website, via email, or through the US mail (see Public Comment section below).

Regional In-Person Public Hearings

Jul 19, 2022	5:30-8:30pm CT	Three Affiliated Tribes Pow Wow Grounds, New Town, ND
Jul 21, 2022	5:30-8:30pm CT	Minot Municipal Auditorium (Old Armory Rm), 430 3rd Ave. SW, Minot, ND 58701
Jul 26, 2022	5:30-8:30pm MT	Mansfield Ctr for Performing Arts (Missouri Rm), 2 Park Drive S, Great Falls, MT 59401
Jul 28, 2022	3:00-6:00pm MT	Fergus County Fairgrounds, 153 Fairgrounds Road, Lewistown, MT 59457
Aug 2, 2022	5:30-8:30pm MT	Kimball Jr/Sr High School, 901 S Nadine St, Kimball, NE, 69145
Aug 3, 2022	5:30-8:30pm MT	Prairie High School, 42315 Wcr 133, New Raymer, Colorado 80742
Aug 4, 2022	5:30-8:30pm MT	ANB Bank Leadership Center, 1400 E College Drive, Cheyenne, WY 82007

Virtual Public Hearings

Aug 8, 2022 5:30-8:30pm CT
Aug 9, 2022 5:30-8:30pm MT

REGISTRATION REQUIRED
at www.gbsdeis.com

- All public hearing materials are available at www.gbsdeis.com.
- Hearings may adjourn before 8:30, if all oral comments have been provided.

To request accommodation to access the print and audio presentation, ask for help making a comment (per the Americans with Disabilities Act), or if you need assistance attending via phone due to lack of internet availability, please call AFGSC Public Affairs at (307) 773-3400 no later than August 1, 2022.

Public Comments

In addition to providing comments on the Draft EIS during the public hearings, written comments can be submitted through the project website at www.gbsdeis.com; via email to gbsdeis@tetratech.com; or by US mail to: GBSD EIS, 10306 Eaton Place, Suite 340, Fairfax, VA, 22030.

Comments will be accepted at any time during the environmental review process. However, oral comments provided at the public hearings and written comments received by August 15, 2022, will be considered in the preparation of the Final EIS.

Page intentionally left blank.

C.4 LETTERS INVITING FEDERAL AGENCIES TO PARTICIPATE IN SECTION 106 CONSULTATION AND THEIR RESPONSE

Page intentionally left blank.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Timothy LaPointe
Regional Director
Bureau of Indian Affairs
Great Plains Regional Office
115 4th Avenue SE, Suite 400
Aberdeen SD 57401

Dear Mr. LaPointe

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would primarily occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Additional maintenance, training, storage, disposal, and support actions would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. Because activities associated with the Project would occur on lands you manage, the Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage your office during the development of the environmental analysis.

Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force is initiating coordination with you regarding undertakings that will be identified for the Project and potential effects to properties listed on or eligible for listing in the National Register of Historic Places (historic properties). The Air Force is engaging early with federal land-managing agencies as it formulates the Project and begins to define the Areas of Potential Effects (APEs).

The Air Force will be involving you or your staff in multiple consultations as the Project is planned and then analyzed for its effects to historic properties. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of historic properties, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of Phase I cultural resources inventory of locations planned for construction, renovation, and demolition activities. Additional opportunities for you to become more familiar with the Project will include on-going agency coordination and public scoping meetings currently planned to be held by the Air Force in multiple locations throughout the Project area in the Fall of 2020.

The Air Force is also initiating consultation on the potential effects of the Project with federally-recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

The Air Force looks forward to working with you and your staff throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource

identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

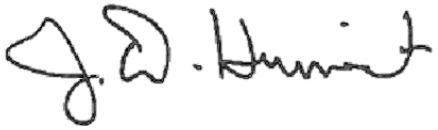
Table 1. Project Components for Each Base

Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. We would greatly appreciate if you would let Ms. Roxlau know the best way to contact you and/or your representative so we can ensure you receive all Project-related communications. Also, please let us know your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

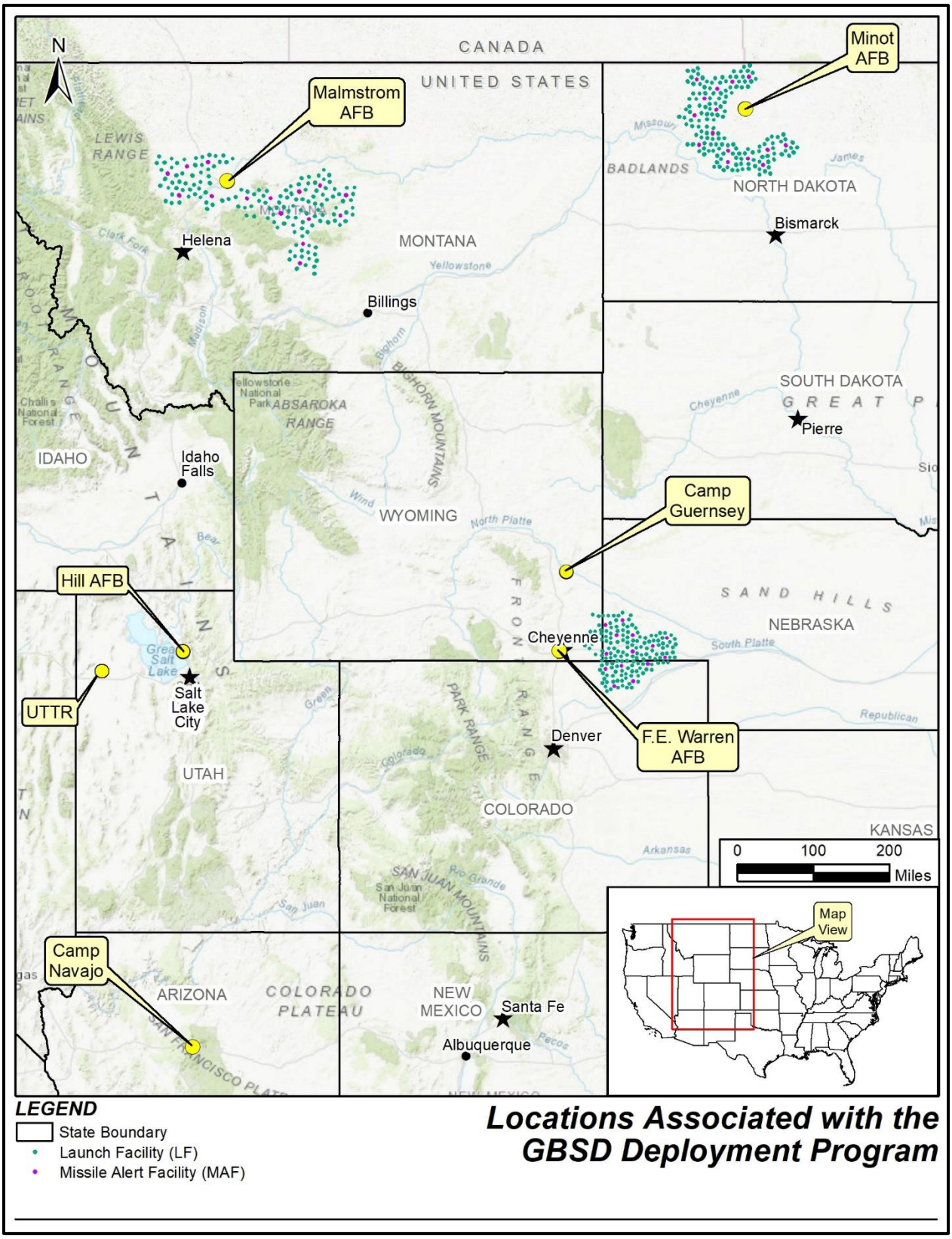
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task force (SATAF) Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Sebastian LeBeau, Regional Archaeologist
Kayla Danks, Agency Superintendent


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
PARK RANGE
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Great Plains Regional Office
115 Fourth Avenue SE, Suite 400
Aberdeen, South Dakota 57401

IN REPLY REFER TO:
DECRM
MC-208

James D. Hunsicker
AFGSC Site Activation Task Force Lead
HQAFGSCA5F
66 Kenney Avenue
Barksdale AFB, LA 71110

Dear Mr. Hunsicker:

This is in response to your letter of May 19, 2020 concerning the planning for the deployment of the Ground- Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). In order for us to evaluate the potential effects of the purposed missile facilities, more detailed information is required of the actual locations to be disturbed on lands held by the United States of America in trust on behalf of the Tribe and within the administrative jurisdiction of the Great Plains Region. In addition, the Tribes or Tribal members may have lands in fee status near the sites of interest. These lands would not necessarily be in our databases, and the Tribes should be contacted directly to ensure all concerns are recognized. The actions considered have the following project names:

May 19, 2020	Project Name: Ground- Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM

For further consultation during the development of the environmental analysis please contact our office personnel at (605) 226-7656, or email Mark Herman, Environmental Engineer mark.herman@bia.gov, or Christie Avery, Environmental Protection Specialist, christie.avery@bia.gov regarding environmental opinions and conditions. Archaeological concerns can be addressed to Dr. Sebastian C. LeBeau II, Regional Archaeologist sebastian.lebeau.ii@bia.gov.

Sincerely,

Regional Director

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

John Mehlhoff
State Director
Bureau of Land Management
Montana/Dakotas State Office
5001 Southgate Drive
Billings MT 59101

Dear Mr. Mehlhoff

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would primarily occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Additional maintenance, training, storage, disposal, and support actions would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. Because activities associated with the Project would occur on lands you manage, the Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage your office during the development of the environmental analysis.

Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force is initiating coordination with you regarding undertakings that will be identified for the Project and potential effects to properties listed on or eligible for listing in the National Register of Historic Places (historic properties). The Air Force is engaging early with federal land-managing agencies as it formulates the Project and begins to define the Areas of Potential Effects (APEs).

The Air Force will be involving you or your staff in multiple consultations as the Project is planned and then analyzed for its effects to historic properties. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of historic properties, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of Phase I cultural resources inventory of locations planned for construction, renovation, and demolition activities. Additional opportunities for you to become more familiar with the Project will include on-going agency coordination and public scoping meetings currently planned to be held by the Air Force in multiple locations throughout the Project area in the Fall of 2020.

The Air Force is also initiating consultation on the potential effects of the Project with federally-recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

The Air Force looks forward to working with you and your staff throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource

identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

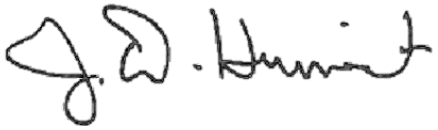
Table 1. Project Components for Each Base

Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. We would greatly appreciate if you would let Ms. Roxlau know the best way to contact you and/or your representative so we can ensure you receive all Project-related communications. Also, please let us know your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

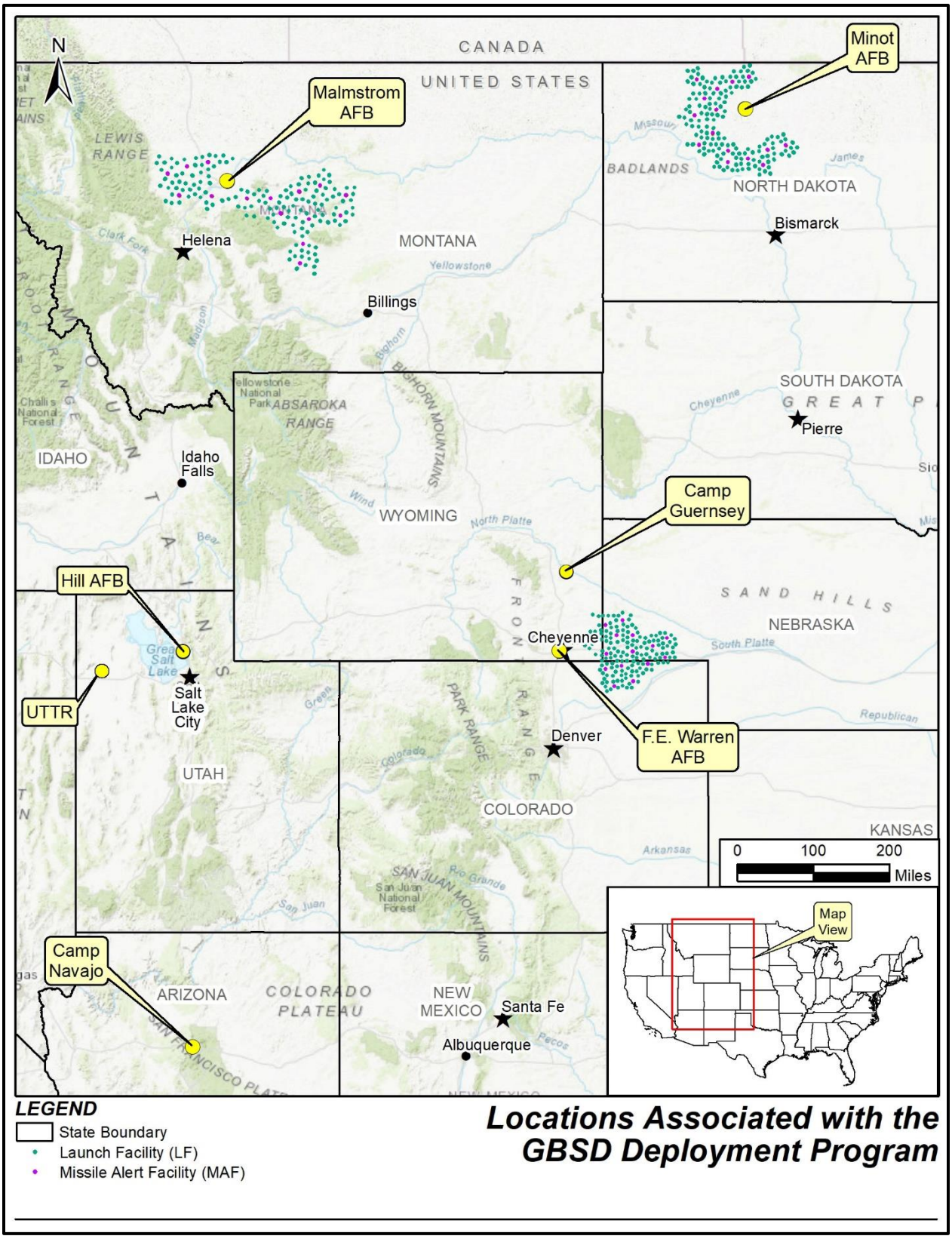
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task force (SATAF) Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Gary Smith, State Archaeologist
Mark Albers, District Manager
Josh Chase, Archaeologist
Bret Blumhardt, Field Manager


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
PARK RANGE
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

TETRA TECH

CONTACT REPORT

Contact:	John Chase, BLM Archaeologist, Havre Field Office MT
Tetra Tech:	Kathy Roxlau, Cultural Resources Lead
Date:	June 2, 2020
Subject:	GBSD EIS – follow-up on letter to initiate Section 106 consultation

Mr. Chase called to get further information on project locations that intersect BLM lands.

I told him that while missile facilities are not located on BLM lands that, as described in the letter, the Air Force anticipates constructing some utility corridors. I explained that the corridors have not been delineated, that that effort is expected over the winter, and that we expect some portion of those corridors to cross BLM lands.

He asked about time lines. I explained that we expected to start working on a PA with the agencies and consulting parties in the Fall, developing a survey plan for cultural surveys at that time, and then doing survey next summer. He said he looks forward to working with us on that effort; likes the idea of a survey plan being developed first.

He explained that when the Air Force gets the corridors worked out, that the next steps would be to contact the Realty Specialists at the Havre Field Office level to work out the steps to be completed. Having a ROW is not needed to do the surveys, but is needed prior to any construction work occurring. The Air Force will submit a ROW application, likely with a Plan of Development, that gets reviewed by the resource specialists. The BLM will likely prepare their own EA(s) for the corridors – if the EIS is done at that point, they will tier off of that. They will used the results of our cultural and biological surveys.

Mr. Chase will socialize the project with the people in his office, so they know to expect to hear about it.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Steve Davies
Area Manager
Bureau of Reclamation
Montana Area Office
P.O. Box 30137
Billings MT 59107-0137

Dear Mr. Davies

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would primarily occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Additional maintenance, training, storage, disposal, and support actions would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. Because activities associated with the Project would occur on lands you manage, the Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage your office during the development of the environmental analysis.

Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force is initiating coordination with you regarding undertakings that will be identified for the Project and potential effects to properties listed on or eligible for listing in the National Register of Historic Places (historic properties). The Air Force is engaging early with federal land-managing agencies as it formulates the Project and begins to define the Areas of Potential Effects (APEs).

The Air Force will be involving you or your staff in multiple consultations as the Project is planned and then analyzed for its effects to historic properties. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of historic properties, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of Phase I cultural resources inventory of locations planned for construction, renovation, and demolition activities. Additional opportunities for you to become more familiar with the Project will include on-going agency coordination and public scoping meetings currently planned to be held by the Air Force in multiple locations throughout the Project area in the Fall of 2020.

The Air Force is also initiating consultation on the potential effects of the Project with federally-recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

The Air Force looks forward to working with you and your staff throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource

identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

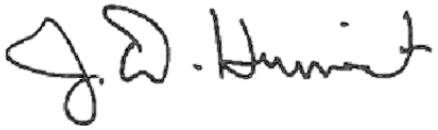
Table 1. Project Components for Each Base

Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. We would greatly appreciate if you would let Ms. Roxlau know the best way to contact you and/or your representative so we can ensure you receive all Project-related communications. Also, please let us know your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

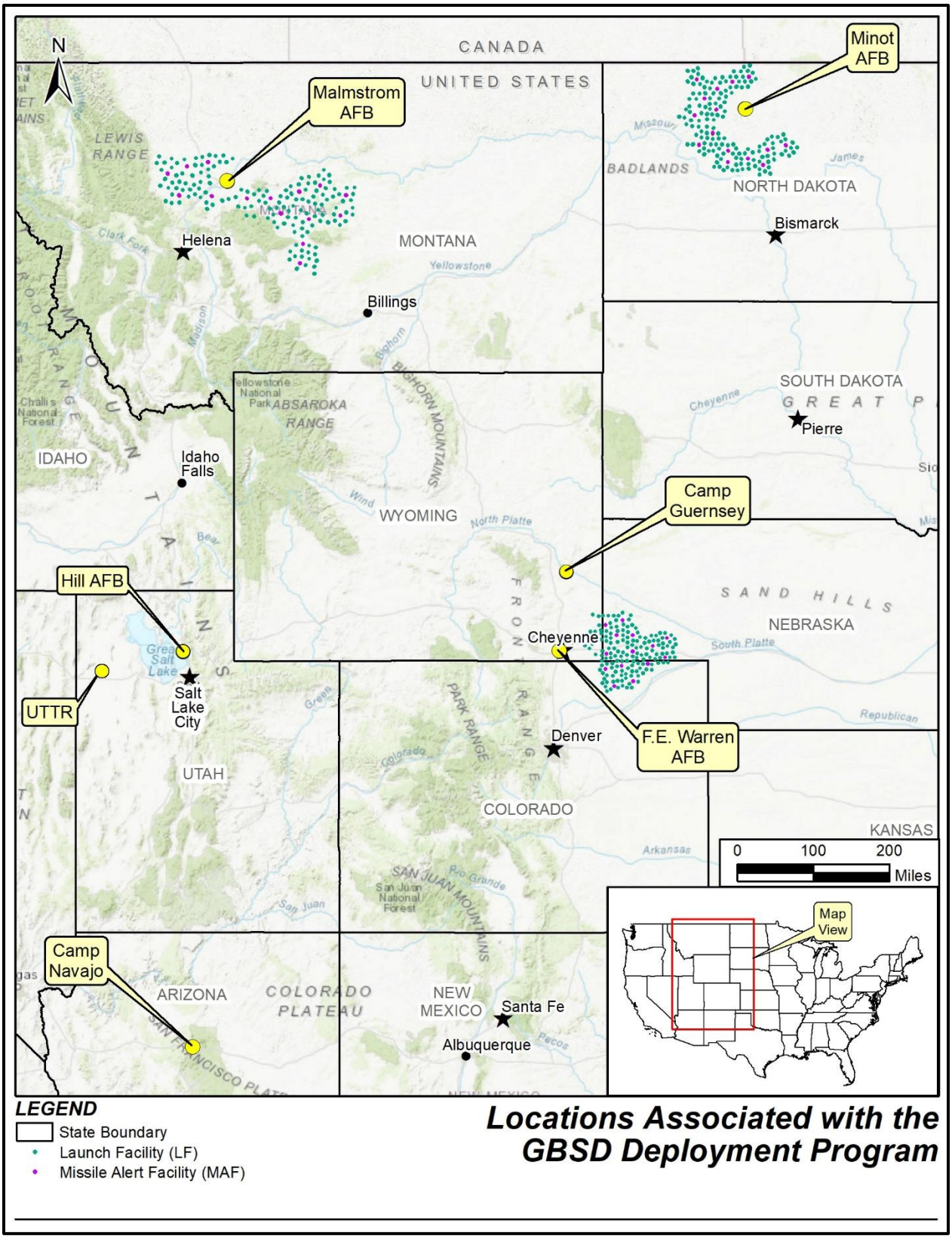
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task force (SATAF) Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Rick Hanson, Area Archaeologist


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
PARK RANGE
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

Please include George Ward Shannon, Jr., Ph.D. RPA Bureau of Reclamation Missouri Basin Regional Archaeologist as the point of contact for the Air Force project referenced in the attached letter.

Shannon, George W <GShannon@usbr.gov>

Thu 6/18/2020 11:37 AM

To: Roxlau, Kathy <Kathy.Roxlau@tetratech.com>
Cc: Fazio, Buddy B <BFazio@usbr.gov>; Hanson, Rick D <rdhanson@usbr.gov>

1 attachments (193 KB)
Air_Force_Ltr_May19-2020.pdf;

Ms. Roxlau.

Please include George Ward Shannon, Jr., Ph.D. RPA Bureau of Reclamation Missouri Basin Regional Archaeologist as the point of contact for the Air Force project referenced in the attached letter.

Thank you,

George Shannon

George Ward Shannon, Jr., Ph.D.
Regional Archaeologist
DOI Region 5 Missouri Basin
DOI Region 6 Arkansas-Rio Grande-Texas Gulf
DOI Region 7 Eastern Colorado Area Office and Wyoming Area Office of the Upper Colorado Basin

Environmental and Cultural Resources Group
Bureau of Reclamation
U.S. Department of Interior
2021 4th Avenue North
Billings, Montana 59101

406-247-7751
gshannon@usbr.gov

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

June 15, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Mr. Eric Laux
Chief, Regulatory Branch
CENWO-OD-R
USACE, Omaha District
1616 Capitol Avenue
Omaha NE 68102

Dear Mr. Laux

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would primarily occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Additional maintenance, training, storage, disposal, and support actions would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. Because activities associated with the Project would occur on lands you manage, the Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage your office during the development of the environmental analysis.

Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force is initiating coordination with you regarding undertakings that will be identified for the Project and potential effects to properties listed on or eligible for listing in the National Register of Historic Places (historic properties). The Air Force is engaging early with federal land-managing agencies as it formulates the Project and begins to define the Areas of Potential Effects (APEs).

The Air Force will be involving you or your staff in multiple consultations as the Project is planned and then analyzed for its effects to historic properties. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of historic properties, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of Phase I cultural resources inventory of locations planned for construction, renovation, and demolition activities. Additional opportunities for you to become more familiar with the Project will include on-going agency coordination and public scoping meetings currently planned to be held by the Air Force in multiple locations throughout the Project area in the Fall of 2020.

The Air Force is also initiating consultation on the potential effects of the Project with federally-recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

The Air Force looks forward to working with you and your staff throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource

identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

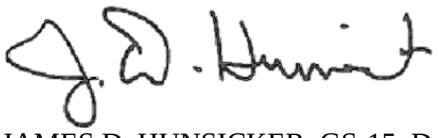
Table 1. Project Components for Each Base

Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. We would greatly appreciate if you would let Ms. Roxlau know the best way to contact you and/or your representative so we can ensure you receive all Project-related communications. Also, please let us know your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

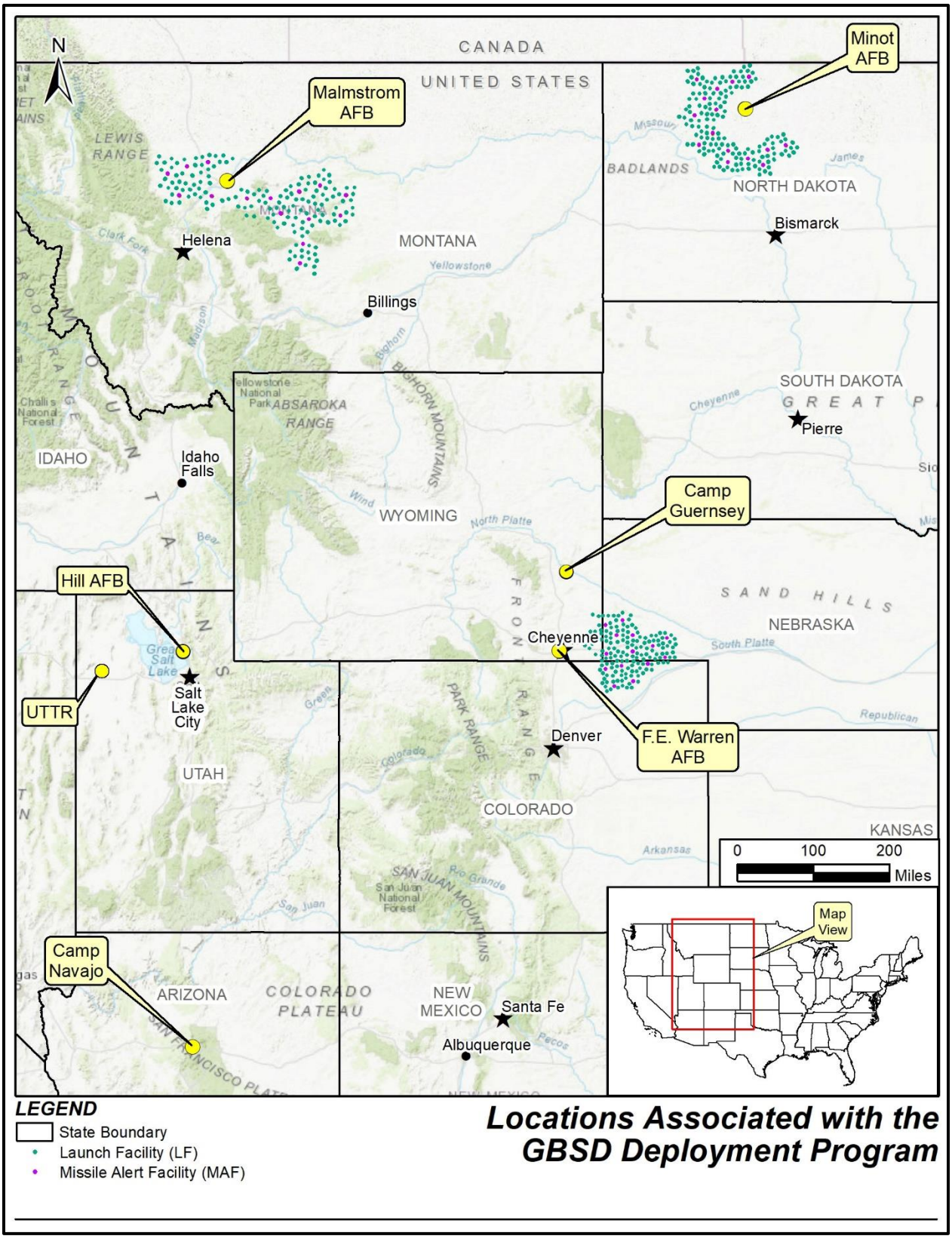
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task force (SATAF) Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Ms. Jennifer Winter, Regulatory Archaeologist, USACE Omaha District
Ms. Devetta Hill, Chief, Field Support, USACE Omaha District
Ms. Patricia McQueary, USACE North Dakota Regulatory Office
Ms. Sage Joyce, USACE Montana Regulatory Office
Mr. Mike Happold, USACE Wyoming Regulatory Office
Mr. Kiel Downing, USACE Denver Regulatory Office
Mr. John Moeschen, USACE Nebraska Regulatory Office


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
PARK RANGE
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

RE: GBSD: NHPA Section 106 contact(s)

Winter, Jennifer R CIV USARMY CENWO (USA) <Jennifer.R.Winter@usace.army.mil>

Fri 6/12/2020 2:07 PM

To: Roxlau, Kathy <Kathy.Roxlau@tetratech.com>
Cc: Andrews, Emmy <Emmy.Andrews@tetratech.com>; Hill, Devetta A CIV USARMY CENWO (USA) <Devetta.A.Hill@usace.army.mil>; Laux, Eric A CIV USARMY CENWO (USA) <Eric.A.Laux@usace.army.mil>

Hey Kathy,
Nice to meet you. If you want to email the pdf letter and attachments, I'm good with that. With the COVID-19 and teleworking we've gone to a lot more electronic submissions.

Since the project will cover multiple states, probably the best way address/send would be to address the letter to Eric, and CC Devetta, Patricia McQueary (ND Reg Office), Sage Joyce (MT Reg Office), Mike Happold (WY Reg Office), Kiel Downing (Denver Reg Office), and John Moeschen (NE Reg office), and me.

Those additional email addresses are:
Patricia.L.Mcqueary@usace.army.mil; Sage.L.Joyce@usace.army.mil; Mike.T.Happold@usace.army.mil; Kiel.G.Downing@usace.army.mil; John.L.Moeschen@usace.army.mil

Eric's Mailing Address is:

Eric Laux
Chief, Regulatory Branch
CENWO-OD-R
Omaha District
1616 Capitol Avenue
Omaha, NE 68102

Let me know if you have any questions!

Jen

Jennifer R. Winter, MA, RPA
Regulatory Archaeologist
US Army Corps of Engineers
Omaha District

"In light of the COVID-19 Pandemic, the Field Support Office staff are teleworking and may not have immediate access to office phones. Please consider sending an email if you have regulatory questions or inquiries."

Mailing Address:
South Dakota Regulatory Office
28563 Powerhouse Rd
Pierre, SD 57501

Desk Phone: 605-945-3389

Fax: 605-224-5945

-----Original Message-----
From: Roxlau, Kathy [mailto:Kathy.Roxlau@tetratech.com]
Sent: Friday, June 12, 2020 2:46 PM
To: Winter, Jennifer R CIV USARMY CENWO (USA) <Jennifer.R.Winter@usace.army.mil>
Cc: Andrews, Emmy <Emmy.Andrews@tetratech.com>
Subject: [Non-DoD Source] Re: GBSD: NHPA Section 106 contact(s)

Hey Jen,

I am Tetra Tech's lead for the Section 106 consultation. We will sending you an "official" initiation of consultation letter. Is there a preference to whom the letter is addressed and who is cc'd? If it is to someone other than you or Devetta, can you provide their contact info? And finally, would you prefer this letter also go via U.S. mail, or just email?

Thanks,
Kathy Roxlau
Tetra Tech Inc.
505-250-7363

From: Winter, Jennifer R CIV USARMY CENWO (USA) <Jennifer.R.Winter@usace.army.mil>
Sent: Friday, June 12, 2020 1:37 PM
To: Hill, Devetta A CIV USARMY CENWO (USA) <Devetta.A.Hill@usace.army.mil>; Andrews, Emmy <Emmy.Andrews@tetratech.com>; Laux, Eric A CIV USARMY CENWO (USA) <Eric.A.Laux@usace.army.mil>
Cc: BARTHOLOMEW, RUSSELL G GS-13 USAF AFMC AFNWC/NX <russell.bartholomew@us.af.mil>; RIGG, ZACHARY D CIV USAF AFMC AFCEC/CZOM <zachary.rigg@us.af.mil>; Roxlau, Kathy <Kathy.Roxlau@tetratech.com>
Subject: RE: GBSD: NHPA Section 106 contact(s)

Hey Emmy,
Looking forward to working with you all on this project. My contact info is in my signature block. I'm still teleworking for a bit, so email is the best first way to reach me. If you need to mail anything, just let me know when to expect it and I will run out to the office to pick it up. The Corps network allows us to use the DOD SAFE file sharing service, so that is also an option.

Take care, stay healthy, and have a great weekend!

Jen

Jennifer R. Winter, MA, RPA
Regulatory Archaeologist
US Army Corps of Engineers
Omaha District

"In light of the COVID-19 Pandemic, the Field Support Office staff are teleworking and may not have immediate access to office phones. Please consider sending an email if you have regulatory questions or inquiries."

Mailing Address:
South Dakota Regulatory Office
28563 Powerhouse Rd
Pierre, SD 57501

Desk Phone: 605-945-3389
Fax: 605-224-5945

-----Original Message-----
From: Hill, Devetta A CIV USARMY CENWO (USA)
Sent: Friday, June 12, 2020 2:24 PM
To: Andrews, Emmy <Emmy.Andrews@tetratech.com>; Laux, Eric A CIV USARMY CENWO (USA) <Eric.A.Laux@usace.army.mil>; Winter, Jennifer R CIV USARMY CENWO (USA) <Jennifer.R.Winter@usace.army.mil>
Cc: BARTHOLOMEW, RUSSELL G GS-13 USAF AFMC AFNWC/NX <russell.bartholomew@us.af.mil>; RIGG, ZACHARY D CIV USAF AFMC AFCEC/CZOM <zachary.rigg@us.af.mil>; Roxlau, Kathy <Kathy.Roxlau@tetratech.com>
Subject: RE: GBSD: NHPA Section 106 contact(s)

Hey, Emmy,

Jen Winter is the archaeologist for the Regulatory Branch and will be involved with this project. I had a brief discussion about the project with her on our staff call this afternoon. I will be sharing with her all the information you have sent us. Jen is cc'ed on this email and can provide you the information you are requesting.

Thanks and I hope you have a very good weekend as well!
D

Devetta Hill
Chief, Field Support
Omaha District
1616 Capitol Avenue
Omaha, NE 68102
402. 995.2462

-----Original Message-----
From: Andrews, Emmy [mailto:Emmy.Andrews@tetratech.com]
Sent: Friday, June 12, 2020 1:43 PM
To: Hill, Devetta A CIV USARMY CENWO (USA) <Devetta.A.Hill@usace.army.mil>; Laux, Eric A CIV USARMY CENWO (USA) <Eric.A.Laux@usace.army.mil>
Cc: BARTHOLOMEW, RUSSELL G GS-13 USAF AFMC AFNWC/NX <russell.bartholomew@us.af.mil>; RIGG, ZACHARY D CIV USAF AFMC AFCEC/CZOM <zachary.rigg@us.af.mil>; Roxlau, Kathy <Kathy.Roxlau@tetratech.com>
Subject: [Non-DoD Source] GBSD: NHPA Section 106 contact(s)

Hi Devetta and Eric,

As part of the environmental compliance effort for the GBSD Project, the Air Force will be meeting its National Historic Preservation Act Section 106 obligations as the Lead Agency for all aspects of the project. The Air Force is currently at the beginning of this effort, which is anticipated to last throughout the EIS process, and is starting by formally initiating consultation by letter with federal agencies who may manage lands in the project area, including USACE.

Would you be able to help us find the Section 106 contact(s) at USACE (name, title, mailing address, telephone number, and email address) that this letter should go to (including any cc's)?

Thank you and have a good weekend!

Emmy Andrews, PMP | Environmental Project Manager Direct +1 (541) 508-0191 | emmy.andrews@tetratech.com <mailto:emmy.andrews@tetratech.com>
Tetra Tech | Leading with Science(r) | tetratech.com

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Bill Avey
Forest Supervisor
Helena-Lewis and Clark National Forest
1220 38th Street North
Great Falls MT 59405

Dear Mr. Avey

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would primarily occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Additional maintenance, training, storage, disposal, and support actions would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. Because activities associated with the Project would occur on lands you manage, the Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage your office during the development of the environmental analysis.

Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force is initiating coordination with you regarding undertakings that will be identified for the Project and potential effects to properties listed on or eligible for listing in the National Register of Historic Places (historic properties). The Air Force is engaging early with federal land-managing agencies as it formulates the Project and begins to define the Areas of Potential Effects (APEs).

The Air Force will be involving you or your staff in multiple consultations as the Project is planned and then analyzed for its effects to historic properties. Anticipated future efforts for which

consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of historic properties, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of Phase I cultural resources inventory of locations planned for construction, renovation, and demolition activities. Additional opportunities for you to become more familiar with the Project will include on-going agency coordination and public scoping meetings currently planned to be held by the Air Force in multiple locations throughout the Project area in the Fall of 2020.

The Air Force is also initiating consultation on the potential effects of the Project with federally-recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

The Air Force looks forward to working with you and your staff throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from

each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

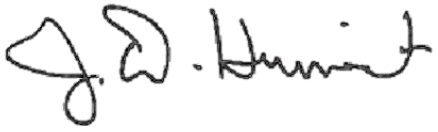
Table 1. Project Components for Each Base

Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. We would greatly appreciate if you would let Ms. Roxlau know the best way to contact you and/or your representative so we can ensure you receive all Project-related communications. Also, please let us know your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

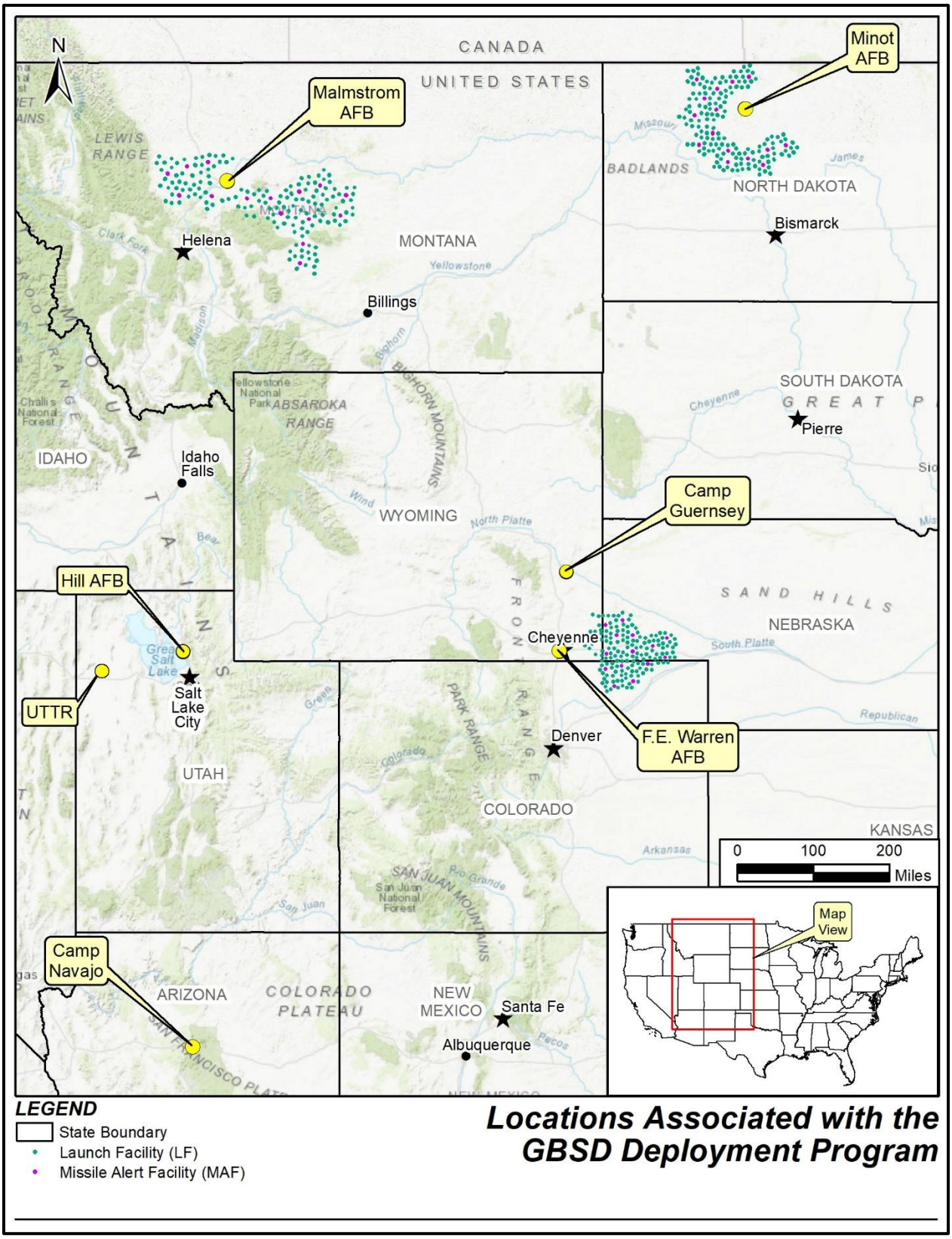
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task force (SATAF) Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Mr. Bill Avey, Forest Supervisor
Mark Bodily, Forest Archaeologist
Arian Randall, Deputy Forest Archaeologist


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
PARK RANGE
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

USDA United States Department of Agriculture
Forest Service
Helena - Lewis and Clark National Forest
2880 Skyway Drive
Helena, MT 59602
406-449-5201
1220 38th Street North
Great Falls, MT 59405
406-791-7700

File Code: 2360
Date: June 8, 2020

James D. Hunsicker, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Ave
Barksdale AFB, LA 71110

Dear Mr. Hunsicker:

We received your letter informing us of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM project. We want to inform you that Deputy Forest Archaeologist, Arian Randall will be the Forest Service point of contact for cultural resources. Currently the best way to contact her is via email at arian.randall@usda.gov due to teleworking. However, you may also contact her via phone at 406-495-3752. Mrs. Randall also has full electronic communication and video conferencing capabilities. Mrs. Randall will be in contact with Ms. Roxlau at Tetra Tech.

Thank you for informing us about this project and look forward to working with you.

Sincerely,

WILLIAM AVEY
Forest Supervisor

cc: Ms. Kathy Roxlau, Tetra Tech Inc.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Monte Williams
Forest Supervisor
Arapaho and Roosevelt National Forests and Pawnee National Grassland
2150 Centre Avenue, Building E
Fort Collins CO 80526

Dear Mr. Williams

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would primarily occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Additional maintenance, training, storage, disposal, and support actions would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. Because activities associated with the Project would occur on lands you manage, the Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage your office during the development of the environmental analysis.

Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force is initiating coordination with you regarding undertakings that will be identified for the Project and potential effects to properties listed on or eligible for listing in the National Register of Historic Places (historic properties). The Air Force is engaging early with federal land-managing agencies as it formulates the Project and begins to define the Areas of Potential Effects (APEs).

The Air Force will be involving you or your staff in multiple consultations as the Project is planned and then analyzed for its effects to historic properties. Anticipated future efforts for which

consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of historic properties, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of Phase I cultural resources inventory of locations planned for construction, renovation, and demolition activities. Additional opportunities for you to become more familiar with the Project will include on-going agency coordination and public scoping meetings currently planned to be held by the Air Force in multiple locations throughout the Project area in the Fall of 2020.

The Air Force is also initiating consultation on the potential effects of the Project with federally-recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

The Air Force looks forward to working with you and your staff throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from

each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

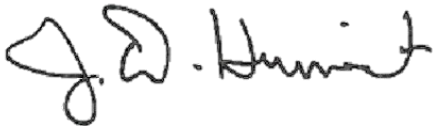
Table 1. Project Components for Each Base

Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. We would greatly appreciate if you would let Ms. Roxlau know the best way to contact you and/or your representative so we can ensure you receive all Project-related communications. Also, please let us know your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

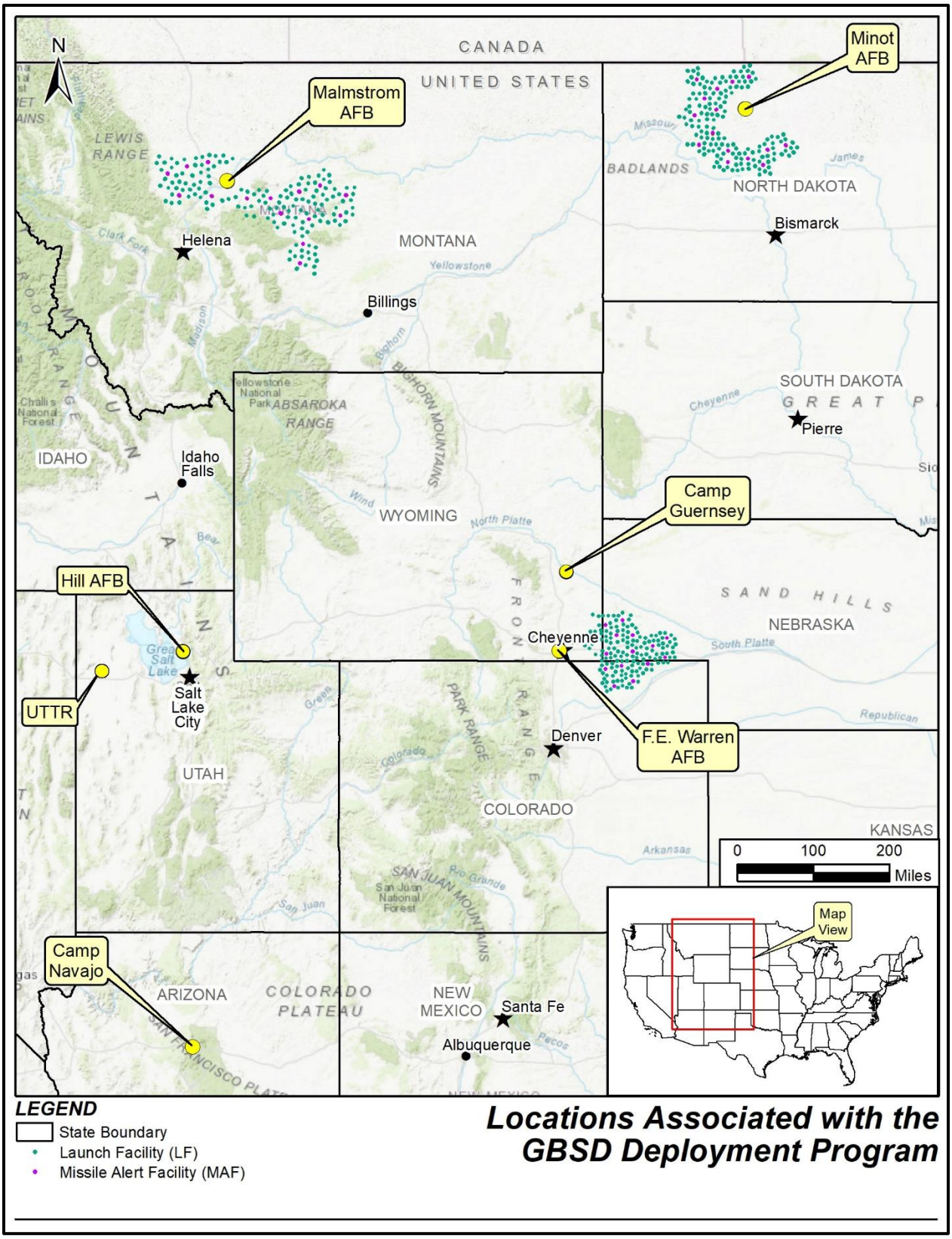
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task force (SATAF) Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Lawrence Fullenkamp, Grasslands Archaeologist


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
PARK RANGE
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

USDA United States Department of Agriculture
Forest Service
Arapaho and Roosevelt National Forests and Pawnee National Grassland
2150 Centre Avenue Building E
Fort Collins, CO 80526
970-295-6600
TDD: 970-295-6794
Fax: 970-295-6696

File Code: 2720; 2360
Date: September 29, 2020

James D. Hunsicker
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB, LA 71110

Dear Mr. Hunsicker:

Thank you for your correspondence dated May 19, 2020, regarding the proposed Ground Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). It is my understanding that the United States Air Force (USAF) is proposing to initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 Code of Federal Regulations Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA* and Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and Title 36, Code of Federal Regulations, Part 800, *Protection of Historic Properties*, to evaluate the potential environmental and cultural resource impacts associated with the Project. The Project will include the decommissioning of the extant Minuteman III ICBM sites and infrastructure and will include modifications to the missile fields and establishing new utility corridors between the bases and the missile fields.

The Minuteman III ICBM sites and associated infrastructure occupy National Forest System lands in the Pawnee National Grassland (PNG) as the result of a Memorandum of Understanding (MOU) signed by USAF and US Forest Service in 1962. This MOU would not be sufficient to authorize the decommissioning of the sites nor would it be sufficient to authorize the establishment of any new utility corridors and associated infrastructure. Per Title 36, Code of Federal Regulations, Part 251, Subpart B, these activities require a Special Use Permit to occupy National Forest System lands. Vern Koehler, PNG Minerals & Lands Staff Officer, will be the project coordinator for the issuance of a special use permit and for the US Forest Service's NEPA review for this project. Mr. Koehler may be reached at 719-252-4778, or vernon.koehler@usda.gov.

For consultation per Section 106 of the NHPA, I intend to participate as a consulting party with the USAF serving as the lead agency for the Project as well as for the issuance of the Special Use Permit, and associated undertaking of the Project. Larry Fullenkamp, North Zone Archaeologist, will serve as the US Forest Service contact for all Section 106 related consultations. Mr. Fullenkamp can be reached at 980-279-6962 or lawrence.fullenkamp@usda.gov.

Thank you for the notification of this project. I look forward to working with you and your staff throughout the development of the environmental impact statement and NHPA Section 106 consultation process for the Project.

Sincerely,

MONTE WILLIAMS

Digitally signed by MONTE WILLIAMS
Date: 2020.09.29 08:16:46 -06'00'

MONTE WILLIAMS
Forest Supervisor

cc: Larry Fullenkamp, Vern Koehler, Mark Tobias, Kathy Roxlau, Curtis Youngman

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

June 15, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Noreen Walsh, Regional Director
U.S. Fish and Wildlife Service
134 Union Blvd.
Lakewood CO 80226

Dear Ms. Walsh

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would primarily occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Additional maintenance, training, storage, disposal, and support actions would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. Because activities associated with the Project would occur on lands you manage, the Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage your office during the development of the environmental analysis.

Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force is initiating coordination with you regarding undertakings that will be identified for the Project and potential effects to properties listed on or eligible for listing in the National Register of Historic Places (historic properties). The Air Force is engaging early with federal land-managing agencies as it formulates the Project and begins to define the Areas of Potential Effects (APEs).

The Air Force will be involving you or your staff in multiple consultations as the Project is planned and then analyzed for its effects to historic properties. Anticipated future efforts for which consultation will occur include development of programmatic alternatives for addressing Minuteman III

missile facilities, identification and evaluation of historic properties, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of Phase I cultural resources inventory of locations planned for construction, renovation, and demolition activities. Additional opportunities for you to become more familiar with the Project will include on-going agency coordination and public scoping meetings currently planned to be held by the Air Force in multiple locations throughout the Project area in the Fall of 2020.

The Air Force is also initiating consultation on the potential effects of the Project with federally-recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

The Air Force looks forward to working with you and your staff throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

Table 1. Project Components for Each Base

Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. We would greatly appreciate if you would let Ms. Roxlau know the best way to contact you and/or your representative so we can ensure you receive all Project-related communications. Also, please let us know your remote electronic capabilities with regard to video conferencing and other communication tools.

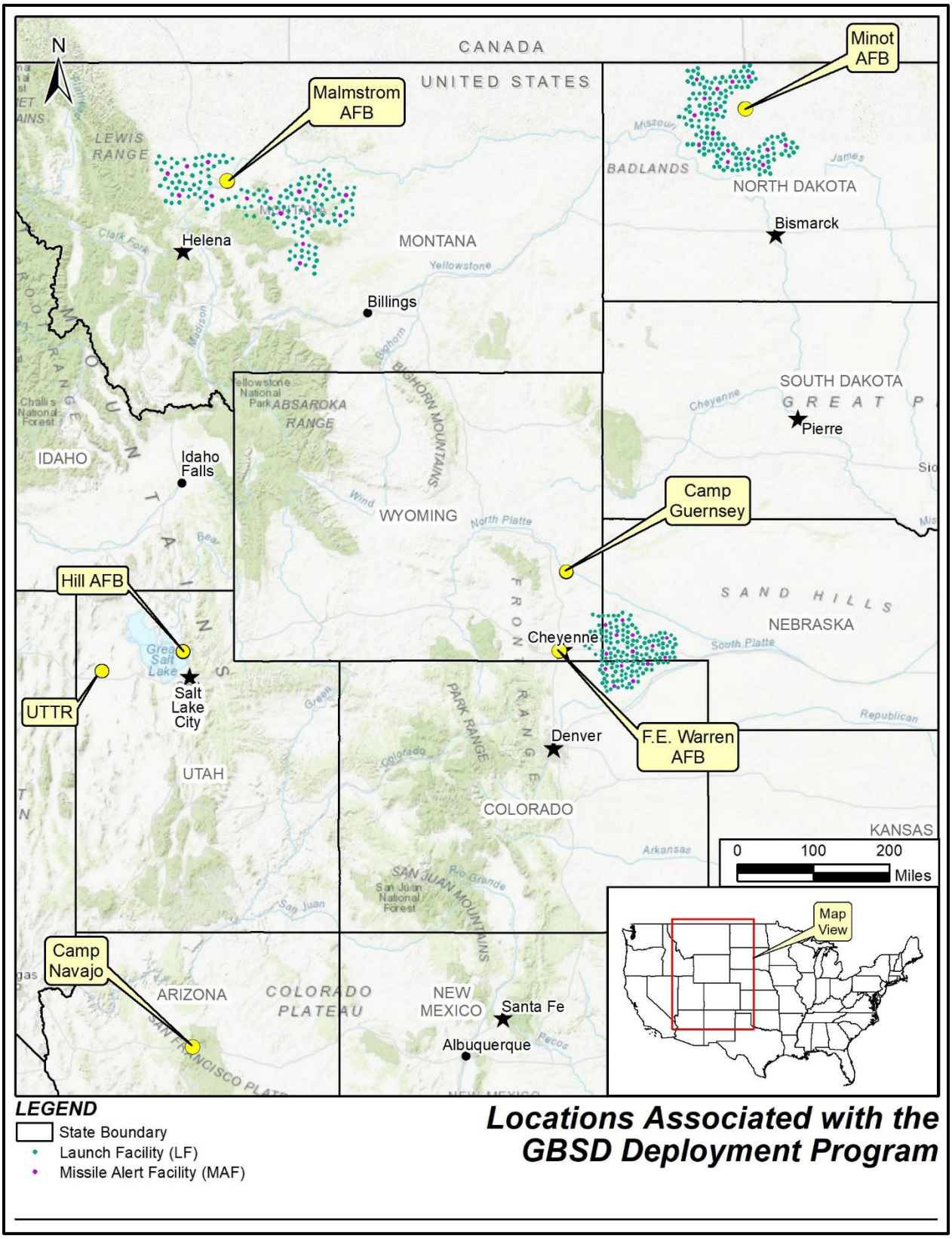
Thank you in advance for your assistance in this effort.

Sincerely

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task force (SATAF) Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Ms. Meg Van Ness, Regional Historic Preservation Officer


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
PARK RANGE
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

Re: [EXTERNAL] GBSD: NHPA Section 106 contact(s)

VanNess, Meg <Meg_VanNess@fws.gov>
Mon 6/15/2020 11:36 AM

To: Roxlau, Kathy <Kathy.Roxlau@tetratech.com>
Cc: Andrews, Emmy <Emmy.Andrews@tetratech.com>

Hi Kathy,

It will end up with me but should probably be sent to the Regional Director:

Noreen Walsh, Regional Director
U.S. Fish and Wildlife Service
134 Union Blvd.
Lakewood, CO 80226

It would be great to send her a scan (Noreen_Walsh@fws.gov), and cc me, just because we are all teleworking and delivery of regular mail is a bit inconsistent.

Thanks,

Meg

Margaret (Meg) Van Ness
Regional Historic Preservation Officer
134 Union Blvd.
Lakewood, Colorado 80228

303.236.8103
303.319.1229

From: Roxlau, Kathy <Kathy.Roxlau@tetratech.com>
Sent: Monday, June 15, 2020 9:52 AM
To: VanNess, Meg <Meg_VanNess@fws.gov>
Cc: Andrews, Emmy <Emmy.Andrews@tetratech.com>
Subject: Re: [EXTERNAL] GBSD: NHPA Section 106 contact(s)

Good Morning Meg,

Just want to make sure you saw this.

Thanks,
Kathy

From: Roxlau, Kathy <Kathy.Roxlau@tetratech.com>
Sent: Friday, June 12, 2020 1:47 PM
To: VanNess, Meg <Meg_VanNess@fws.gov>
Cc: Andrews, Emmy <Emmy.Andrews@tetratech.com>
Subject: Re: [EXTERNAL] GBSD: NHPA Section 106 contact(s)

Meg,

I am Tetra Tech's lead for the Section 106 consultation. We will sending you an "official" initiation of consultation letter. Is there a preference to whom the letter is addressed and who is cc'd? If it is to go to someone other than you, can you provide their contact info?

Thanks,
Kathy Roxlau
Tetra Tech Inc.
505-250-7363

From: VanNess, Meg <Meg_VanNess@fws.gov>
Sent: Friday, June 12, 2020 1:07 PM
To: Boroja, Maria T <maria_boroja@fws.gov>; Andrews, Emmy <Emmy.Andrews@tetratech.com>
Cc: BARTHOLOMEW, RUSSELL G GS-13 USAF AFMC AFNWC/NX <russell.bartholomew@us.af.mil>; RIGG, ZACHARY D CIV USAF AFMC AFCEC/CZOM <zachary.rigg@us.af.mil>; Roxlau, Kathy <Kathy.Roxlau@tetratech.com>
Subject: Re: [EXTERNAL] GBSD: NHPA Section 106 contact(s)

Yep - that would be me. My contact information is below.

Meg

Margaret (Meg) Van Ness
Regional Historic Preservation Officer
134 Union Blvd.
Lakewood, Colorado 80228

303.236.8103
303.319.1229

From: Boroja, Maria T <maria_boroja@fws.gov>
Sent: Friday, June 12, 2020 12:55 PM
To: Andrews, Emmy <Emmy.Andrews@tetratech.com>; VanNess, Meg <Meg_VanNess@fws.gov>
Cc: BARTHOLOMEW, RUSSELL G GS-13 USAF AFMC AFNWC/NX <russell.bartholomew@us.af.mil>; RIGG, ZACHARY D CIV USAF AFMC AFCEC/CZOM <zachary.rigg@us.af.mil>; Roxlau, Kathy <Kathy.Roxlau@tetratech.com>
Subject: Re: [EXTERNAL] GBSD: NHPA Section 106 contact(s)

Hi Emmy,

I believe that is Meg Van Ness for us, she is cc:'d here for your convenience.

Meg, am I correct that you are our 106 POC? If not can you direct Emmy to the appropriate contact?

Thank you and have a great weekend!

From: Andrews, Emmy <Emmy.Andrews@tetratech.com>
Sent: Friday, June 12, 2020 12:41 PM
To: Boroja, Maria T <maria_boroja@fws.gov>
Cc: BARTHOLOMEW, RUSSELL G GS-13 USAF AFMC AFNWC/NX <russell.bartholomew@us.af.mil>; RIGG, ZACHARY D CIV USAF AFMC AFCEC/CZOM <zachary.rigg@us.af.mil>; Roxlau, Kathy <Kathy.Roxlau@tetratech.com>
Subject: [EXTERNAL] GBSD: NHPA Section 106 contact(s)

Hi Maria,

As part of the environmental compliance effort for the GBSD Project, the Air Force will be meeting its National Historic Preservation Act Section 106 obligations as the Lead Agency for all aspects of the project. The Air Force is currently at the beginning of this effort, which is anticipated to last throughout the EIS process, and is starting by formally initiating consultation by letter with federal agencies who may manage lands in the project area, including USFWS.

Would you be able to help us find the Section 106 contact(s) at USFWS (name, title, mailing address, telephone number, and email address) that this letter should go to (including any cc's)?

Thank you and have a good weekend!

Emmy Andrews, PMP | Environmental Project Manager
Direct **+1 (541) 508-0191** | emmy.andrews@tetratech.com
Tetra Tech | Leading with Science® | tetratech.com

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE GLOBAL STRIKE COMMAND

May 19, 2020

JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task Force Lead
HQ AFGSC A5F
66 Kenney Avenue
Barksdale AFB LA 71110

Colonel Anthony Hammett
Chief, ARNG G9
Army National Guard
111 S. George Mason Drive
Arlington VA 22204

Dear Colonel Hammett

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM (the Project). The GBSD weapon system represents the modernization of the United States' land-based nuclear arsenal and would replace the aging Minuteman III. The Project's deployment actions would primarily occur at the following installations and their associated missile fields: Malmstrom Air Force Base (AFB), Montana; Francis E. Warren AFB, Wyoming; and Minot AFB, North Dakota. Additional maintenance, training, storage, disposal, and support actions would occur at Hill AFB, Utah; the Utah Test and Training Range (UTTR); and Camp Guernsey, Wyoming. Existing missile storage and support actions would continue unchanged at Camp Navajo, Arizona, with no changes to activities, personnel, facilities, or infrastructure (see attached map).

The Air Force will initiate the environmental planning process under the *National Environmental Policy Act* (NEPA) and 40 CFR Parts 1500 – 1508, *Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the NEPA*, to evaluate potential environmental impacts associated with the GBSD projects. Because activities associated with the Project would occur on lands you manage, the Air Force Global Strike Command, Nuclear Weapons Center, and Air Force Civil Engineering Center, with help from a contractor team of environmental and cultural resource professionals, will engage your office during the development of the environmental analysis.

Per Section 106 (54 United States Code [USC] § 306108) of the *National Historic Preservation Act* (NHPA) of 1966, as amended, and 36 Code of Federal Regulations (CFR) Part 800, *Protection of Historic Properties*, the Air Force is initiating coordination with you regarding undertakings that will be identified for the Project and potential effects to properties listed on or eligible for listing in the National Register of Historic Places (historic properties). The Air Force is engaging early with federal land-managing agencies as it formulates the Project and begins to define the Areas of Potential Effects (APEs).

The Air Force will be involving you or your staff in multiple consultations as the Project is planned and then analyzed for its effects to historic properties. Anticipated future efforts for which

consultation will occur include development of programmatic alternatives for addressing Minuteman III missile facilities, identification and evaluation of historic properties, assessment of effects, and planning and implementation of mitigation measures; and planning and implementation of Phase I cultural resources inventory of locations planned for construction, renovation, and demolition activities. Additional opportunities for you to become more familiar with the Project will include on-going agency coordination and public scoping meetings currently planned to be held by the Air Force in multiple locations throughout the Project area in the Fall of 2020.

The Air Force is also initiating consultation on the potential effects of the Project with federally-recognized Native American Tribes (see attached list); the State Historic Preservation Officers of North Dakota, Montana, Wyoming, Nebraska, Colorado, Utah, and Arizona; and the Tribal Historic Preservation Officer of the Fort Berthold Reservation. The Air Force is also coordinating with the following federal agencies who administer lands included in the Project: Bureau of Indian Affairs, U.S. Forest Service, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service.

Description of the Project

GBSD deployment activities would include completely replacing all ground-based Minuteman III ICBMs deployed in the continental United States with the GBSD system, a technologically mature ICBM system. The GBSD would replace all components of the Minuteman III, including the three motor stages, inter-stages, and guidance set. The legacy reentry systems are being addressed in a separate ICBM program. All launch facilities, communications, infrastructure, and technologies would be modernized and replaced as necessary to support the GBSD system. The existing missile alert facilities (MAFs), launch centers (LCs), and launch facilities (LFs) would undergo selective modernization to "like new" condition and also receive enhanced security features. Deployment activities would not include the generation or disposal of nuclear material, as the reentry vehicles would be reused in the GBSD systems. The number of ground-based nuclear missiles in the continental U.S. would remain unchanged.

Components of the Project would include:

- Constructing or modifying on-base facilities and infrastructure;
- Converting and modifying MAFs, LCs, and LFs to "like new" condition;
- Continuing use of existing utility corridors;
- Establishing new utility corridors between the bases and the missile fields;
- Manufacturing, deploying, and maintaining the GBSD weapon system; and
- Removing, decommissioning, and disposing of the Minuteman III.

Table 1 outlines which of these components of the Project would be executed at each installation. Francis E. Warren, Malmstrom, and Minot AFBs would have all the components outlined above. Hill AFB would provide support facilities and Minuteman III decommissioning activities. Camp Guernsey would provide training and support activities. The UTTR and Camp Navajo would provide support for storage and demilitarization of Minuteman III ICBMs.

The Air Force looks forward to working with you and your staff throughout the development of the NEPA environmental impact statement and NHPA Section 106 consultation process for the GBSD deployment and Minuteman III decommissioning and disposal project. The Point of Contact for Project cultural resources is Ms. Kathy Roxlau with Tetra Tech, Inc., who can be reached at (505) 250-7363 or kathy.roxlau@tetratech.com. A team of Air Force cultural resources professionals has been established to work with Ms. Roxlau and Tetra Tech, Inc. in all phases of Tribal, archaeological, and historic resource identification, evaluation, analysis, and consultation for the Project. Cultural resources specialists from

each of the installations are also aware of and involved in the project. All determinations of effects will be made by the Air Force members of this team.

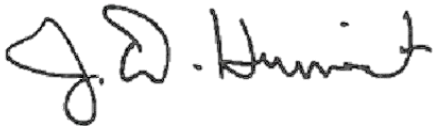
Table 1. Project Components for Each Base

Location	Construction of on-base facilities and infrastructure	Conversion of MAFs, LCs, and LFs	Establishment of utility corridors	Deployment of GBSD	Decommission and disposal of Minuteman III
F.E. Warren AFB, WY	X	X	X	X	X
Malmstrom AFB, MT	X	X	X	X	X
Minot AFB, ND	X	X	X	X	X
Hill AFB, UT	X				X
Utah Test and Training Range, UT	X				X
Camp Guernsey, WY	X				
Camp Navajo, AZ					X

The Air Force is planning to conduct consultation through correspondence, emails, telephone calls, conference calls, and, when social distancing is no longer required, in-person meetings. During this time when our society is addressing the threat of the coronavirus, the Air Force understands that everyone is having to find creative ways to continue working. We would greatly appreciate if you would let Ms. Roxlau know the best way to contact you and/or your representative so we can ensure you receive all Project-related communications. Also, please let us know your remote electronic capabilities with regard to video conferencing and other communication tools.

Thank you in advance for your assistance in this effort.

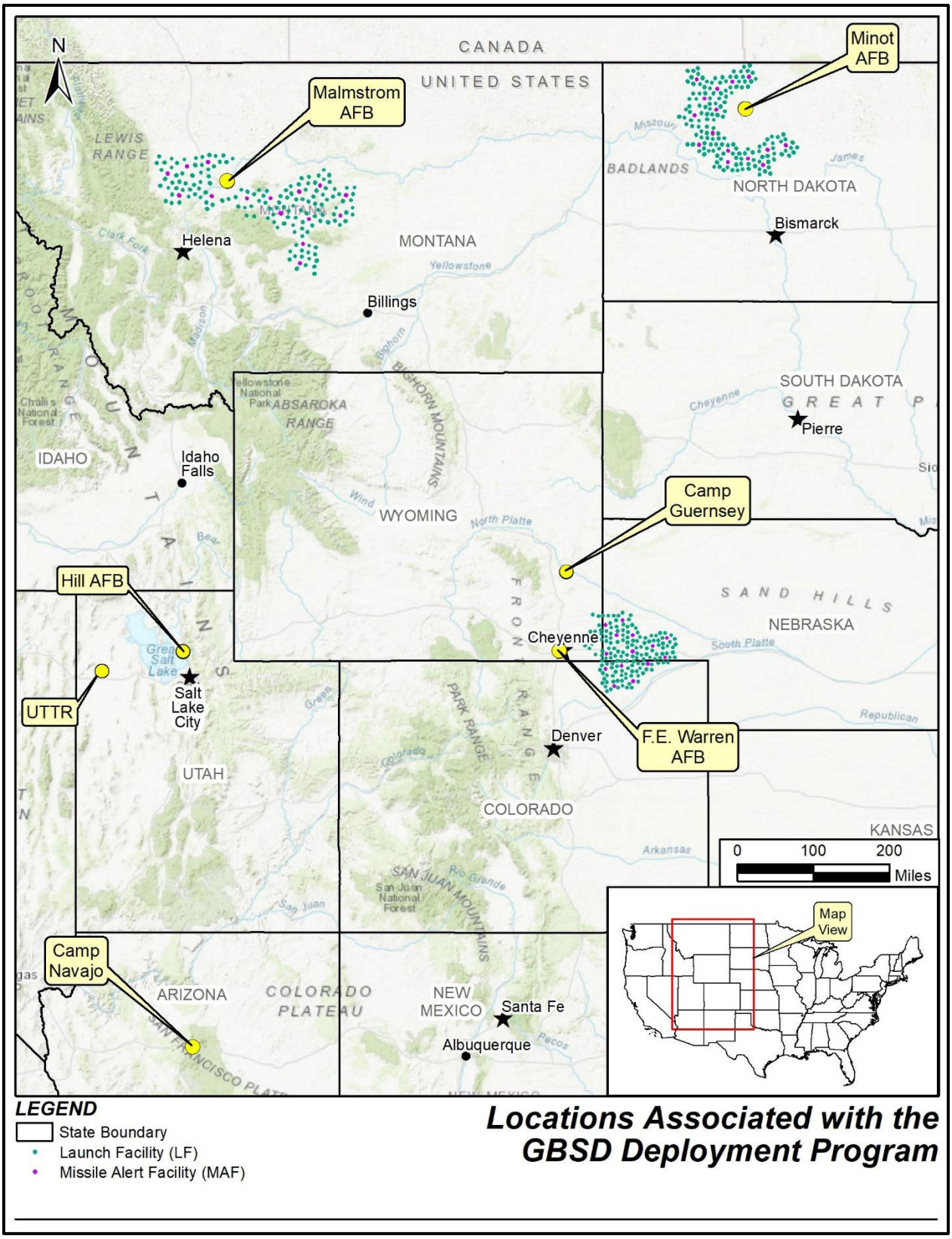
Sincerely



JAMES D. HUNSICKER, GS-15, DAFC
AFGSC Site Activation Task force (SATAF) Lead

2 Attachments:
Map of Locations Associated with the GBSD Deployment Program
Tribal Nations with Whom the Air Force Is Initiating Section 106 Consultation for the GBSD Project

cc: Jeffrey L. Coron, NEPA Project Manager, ARNG-IEP-M, NEPA/ECOP
Eric Beckley, Natural and Cultural Resources Program Manager


N
CANADA
UNITED STATES
Minot AFB
Malmstrom AFB
LEWIS RANGE
BADLANDS
NORTH DAKOTA
Bismarck
Helena
MONTANA
Billings
SOUTH DAKOTA
Pierre
IDAHO
Idaho Falls
ABSAROKA RANGE
BIGHORN MOUNTAINS
WYOMING
Camp Guernsey
Hill AFB
SAND HILLS
NEBRASKA
Cheyenne
Salt Lake City
UTTR
F.E. Warren AFB
Denver
PARK RANGE
UTAH
COLORADO
KANSAS
0 100 200
Miles
Map View
Camp Navajo
ARIZONA
COLORADO PLATEAU
NEW MEXICO
Santa Fe
Albuquerque
LEGEND
State Boundary
Launch Facility (LF)
Missile Alert Facility (MAF)
Locations Associated with the GBSD Deployment Program

Tribal Nations with Whom the Air Force
Is Initiating Section 106 Consultation for the GBSD Project

Apache Tribe of Oklahoma
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation
Blackfeet Tribe of the Blackfeet Indian Reservation of MT
Bois Forte Band of Chippewa
Cheyenne and Arapaho Tribes of Oklahoma
Cheyenne and Arapaho Tribes of Oklahoma - Arapaho Tribe
Cheyenne and Arapaho Tribes of Oklahoma - Cheyenne Tribe
Cheyenne River Sioux Tribe
Chippewa Cree Tribe of the Rocky Boy's Reservation of Montana
Comanche Nation of Oklahoma
Confederated Salish and Kootenai Tribes of the Flathead Reservation
Confederated Tribes of the Goshute Reservation, Nevada and Utah
Crow Creek Sioux Tribe
Crow Tribe
Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada
Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
Ely Shoshone Tribe of Nevada
Flandreau Santee Sioux Tribe of South Dakota
Fond du Lac Band of Lake Superior Chippewa
Fort Belknap Indian Community
Fort Sill Apache Tribe
Grand Portage Band of Lake Superior Chippewa
Hopi Tribe
Jicarilla Apache Tribe
Kiowa Tribe of Oklahoma
Leech Lake Band of Ojibwe
Little Shell Tribe of Chippewa Indians
Lower Brule Sioux Tribe of the Lower Brule Reservation, SD
Lower Sioux Indian Community
Mescalero Apache Tribe
Mille Lacs Band of Ojibwe
Navajo Nation, Arizona, New Mexico & Utah
Northern Arapaho Tribe
Northern Cheyenne Tribe
Northwestern Band of the Shoshone Nation
Oglala Sioux Tribe
Paiute Indian Tribe of Utah
Pawnee Nation of Oklahoma
Prairie Island Indian Community
Pueblo of Taos
Pueblo of Zuni
Red Lake Band of Chippewa Indians
Rosebud Sioux Tribe
San Juan Southern Paiute Tribe of Arizona
Santee Sioux Nation
Shakopee Mdewakanton Sioux Community
Shoshone-Bannock Tribes of the Fort Hall Reservation

Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
Sisseton-Wahpeton Oyate
Skull Valley Band of Goshute Indians of Utah
Southern Ute Indian Tribe
Spirit Lake Nation
Standing Rock Sioux Tribe
Te-Moak Tribe of Western Shoshone Indians of Nevada
Te-Moak Tribe of Western Shoshone Indians of Nevada (Wells Band of Western Shoshone)
Three Affiliated Tribes of the Mandan, Hidatsa & Arikara Nation
Turtle Mountain Band of Chippewa Indians
Upper Sioux Indian Community
Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
Ute Mountain Ute Tribe
White Earth Nation of Minnesota Chippewa
Yankton Sioux Tribe

RE: [Non-DoD Source] Air Force GBSD Project - letter initiating Section 016 consultation

Coron, Jeffrey L CTR NG NGB ARNG (USA) <jeffrey.l.coron.ctr@mail.mil>

Mon 6/29/2020 8:43 AM

To: Roxlau, Kathy <Kathy.Roxlau@tetratech.com>
Cc: Gbsdadmin <Gbsdadmin@tetratech.com>; Beckley, Eric R CIV NG NGB ARNG (USA) <eric.r.beckley.civ@mail.mil>

Thank you Kathy.
We appreciate the opportunity to coordinate with you and the USAF on the project. Please feel free to contact us any time.

v/r,
Jeffrey L. Coron
ARNG-IEP-M, NEPA/ECOP Program Manager
(703) 607-9157
Jeffrey.l.coron.ctr@mail.mil

NATIONAL GUARD BUREAU
111 SOUTH GEORGE MASON DRIVE
ARLINGTON VA 22204-1373
Note: I'm not a government employee and have no legal authority to obligate any federal, state, or local government to perform any action or payment.

To securely transfer 20+ MB files please use https://safe.apps.mil/

From: Roxlau, Kathy <Kathy.Roxlau@tetratech.com>
Sent: Sunday, June 14, 2020 11:25 AM
To: Coron, Jeffrey L CTR NG NGB ARNG (USA) <jeffrey.l.coron.ctr@mail.mil>; Beckley, Eric R CIV NG NGB ARNG (USA) <eric.r.beckley.civ@mail.mil>
Cc: Gbsdadmin <Gbsdadmin@tetratech.com>
Subject: [Non-DoD Source] Air Force GBSD Project - letter initiating Section 016 consultation

Dear Mr. Coron and Mr. Beckley,

The United States Air Force is conducting planning efforts for the deployment of the Ground-Based Strategic Deterrent intercontinental ballistic missile (ICBM) and decommissioning and disposal of the Minuteman III ICBM. The Air Force has mailed a letter via U.S. Postal Service to Colonel Hammett regarding this Project and the initiation of consultation under Section 106 of the *National Historic Preservation Act*. Per your request to Alison Rubio of the Air Force Civil Engineering Center, a copy of this letter is attached.
Very respectfully,

Kathy Roxlau | Cultural Resources Specialist
Direct **+1 (505) 250-7363** | kathy.roxlau@tetratech.com
Tetra Tech | Leading with Science® | tetratech.com

C.5 PROGRAMMATIC AGREEMENT

Page intentionally left blank.

PROGRAMMATIC AGREEMENT
AMONG AIR FORCE GLOBAL STRIKE COMMAND;
AIR FORCE MATERIEL COMMAND;
THREE AFFILIATED TRIBES OF THE MANDAN, HIDATSA, AND ARIKARA NATION;
ARIZONA STATE HISTORIC PRESERVATION OFFICER;
COLORADO STATE HISTORIC PRESERVATION OFFICER;
MONTANA STATE HISTORIC PRESERVATION OFFICER;
NEBRASKA STATE HISTORIC PRESERVATION OFFICER;
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER;
UTAH STATE HISTORIC PRESERVATION OFFICER;
WYOMING STATE HISTORIC PRESERVATION OFFICER;
NATIONAL PARK SERVICE, INTERIOR REGIONS 6, 7, AND 8;
AND ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
DEPLOYMENT OF THE SENTINEL WEAPON SYSTEM AND DECOMMISSIONING AND DISPOSAL OF THE MINUTEMAN III WEAPON SYSTEM IN ARIZONA, COLORADO, MONTANA, NEBRASKA, NORTH DAKOTA, UTAH, AND WYOMING

LAND ACKNOWLEDGEMENT

We, the Signatories and Concurring Parties to this Agreement, acknowledge that the lands impacted by this project are the ancestral lands of Indigenous Peoples represented by over 63 Tribal governments. The Indigenous Peoples' ancestors have been living and working on these lands from time immemorial. It is important for all parties and individuals involved in the project to understand the long-standing history that has brought us to reside on the land and to seek to understand our place within that history.

Furthermore, we acknowledge that the current location of Native American communities and their associated reservations and Tribal trust lands is not necessarily indicative of their ancestral homelands or their villages, hunting grounds, and wandering areas in the 18th, 19th, and earlier centuries. As such, Tribal governments and Native American communities have a strong and overlapping interest in lands far removed from their reservations and current localities. In recognition of this reality, this Agreement will facilitate all Tribal governments being able to provide input on the identification, documentation, evaluation, and protection of sites of Tribal significance throughout all phases and areas of the Undertaking.

PREAMBLE

WHEREAS, the Air Force Global Strike Command (AFGSC), on behalf of the Department of the Air Force (DAF), intends to decommission the Minuteman III intercontinental ballistic missile (ICBM) weapon system and replace it with the Sentinel ICBM weapon system; and

WHEREAS, the Sentinel weapon system would be deployed at F.E. Warren Air Force Base (AFB) in Wyoming, Nebraska, and Colorado; Malmstrom AFB in Montana; and Minot AFB in North Dakota, with supporting components and activities occurring at Hill AFB in Utah; the Utah Test and

Training Range (UTTR) in Utah; Camp Guernsey in Wyoming; and Camp Navajo in Arizona as described in Appendix A; and

WHEREAS, the Sentinel weapon system deployment would include parallel and concurrent construction lines of effort (LOEs) (see Appendix B) that include the replacement and/or conversion of existing missile alert facilities (MAFs) and launch facilities (LFs) (LOE #1), upgrading existing utility corridors and constructing new utility corridors (LOE #2), construction of new communication towers (LOE #3), construction and/or renovation of existing installation facilities and utilities (LOE #4), and development of workforce hubs and construction laydown areas (LOE #5); and

WHEREAS, AFGSC determined the Sentinel weapon system deployment and Minuteman III weapon system decommissioning and disposal comprise an Undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA) at Title 54 of the *United States Code* (U.S.C.) § 306108 and its implementing regulations, *Protection of Historic Properties* (in Title 36 of the *Code of Federal Regulations* [C.F.R.] Part 800); and

WHEREAS, AFGSC is DAF's acquisition agent, or proponent, and has operational control of the Undertaking; and the Director, Strategic Plans, Programs and Requirements, has signed this Programmatic Agreement (Agreement) on behalf of the Commander, AFGSC; and

WHEREAS, the Air Force Materiel Command (AFMC), as a supporting command, is the executing agent for the Sentinel weapon system deployment and has administrative control of the Undertaking; and the Director, Strategic Plans, Programs, Requirements, and Analyses, has signed this Agreement on behalf of the Commander, AFMC; and

WHEREAS, the Commander, AFMC, has assigned responsibility for implementing and meeting the commitments as described in this Agreement to the Air Force Nuclear Weapons Center (AFNWC) and the Commander, AFNWC has assigned oversight and execution authority to its Sentinel Systems Directorate (AFNWC/NX); and

WHEREAS, AFGSC and AFMC shall establish a Site Activation Task Force (SATF) at each missile wing to oversee the Undertaking, and the SATF will integrate all activities supporting the Undertaking at each missile wing through the operation of a Tactical Operations Center to ensure the construction schedule is maintained without impact on National Security priorities; and

WHEREAS, AFGSC prepared an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA) that analyzes the potential impacts on the human and natural environments from Sentinel weapon system deployment and Minuteman III weapon system decommissioning and disposal, and will determine whether and how to implement Sentinel weapon system deployment and Minuteman III weapon system decommissioning and disposal and any associated terms and conditions of implementation through the Record of Decision (ROD); and

WHEREAS, AFGSC and AFMC recognized that, because of the large size and complexity of the Undertaking and because the Undertaking would be implemented to fulfill national security priorities under a constrained and accelerated schedule with design occurring concurrently with compliance for NHPA Section 106, the identification and evaluation of historic properties that might be affected by the Undertaking and the identification and assessment of effects on historic properties cannot be fully knowable prior to approval of the Undertaking, in accordance with 36 C.F.R. § 800.14(b)(1)(ii); and

WHEREAS, AFGSC and AFMC determined that developing this Agreement, which creates a standardized and phased process to identify, assess, and resolve adverse effects on historic properties affected by the Undertaking, subsequent to the Agreement's execution pursuant to

36 C.F.R. § 800.14(b)(3), would enable AFGSC and AFMC to meet the Undertaking's schedule for compliance with NHPA Section 106; and

WHEREAS, pursuant to 36 C.F.R. § 800.4(a)(1), AFGSC and AFMC have defined the area of potential effects (APE) for this Agreement as the boundaries of Camp Guernsey, Camp Navajo, Hill AFB, the UTTR, F.E. Warren AFB, Malmstrom AFB, Minot AFB, and the three (3) associated missile fields (see Appendix A); and

WHEREAS, AFGSC and AFMC have identified historic properties and as yet unevaluated cultural resources located in the Agreement APE through literature research, remote sensing studies, consultation with federally recognized Indian Tribes (Tribes), right-of-way inspections, and cultural resources survey, and acknowledge that the identification effort is not complete and will continue throughout the implementation of this Agreement in accordance with the stipulations herein; and

WHEREAS, AFGSC and AFMC developed Wing Survey Plans for F.E. Warren and Camp Guernsey, Hill AFB and the UTTR, Malmstrom, and Minot AFBs to serve as reference documents for Undertaking-related cultural resources work conducted under this Agreement and that said Wing Survey Plans will be updated (in accordance with Stipulation V) prior to the commencement of construction activities in each missile field; and

WHEREAS, known historic properties located within the APE include the Fort D.A. Russell National Historic Landmark (NHL) located on F.E. Warren AFB, so designated by the Secretary of the Interior (SOI) on May 15, 1975; the Charles M. Russell House and Studio NHL located in Great Falls, Montana, so designated by the SOI on December 21, 1965; the Great Falls Portage NHL located in Cascade County, Montana, so designated by the SOI on May 23, 1966; and the Lewis and Clark, Nez Perce (Nee-Me-Poo), Mormon Pioneer, Oregon, California, and Pony Express National Historic Trails; and

WHEREAS, AFGSC and AFMC have determined that the Minuteman III weapon system, primarily consisting of MAFs and LFs located in the missile fields of F.E. Warren, Malmstrom, and Minot AFBs, as described in Appendix C, are significant under Criterion A, retain their integrity, and are eligible for listing in the National Register of Historic Places (National Register) as three (3) individual historic districts; and

WHEREAS, AFGSC and AFMC have determined that the Undertaking will have adverse effects on the F.E. Warren Air Force Base Missile Field Historic District, the Malmstrom Air Force Base Missile Field Historic District, and the Minot Air Force Base Missile Field Historic District by directly altering the characteristics of the three (3) historic properties through physical damage to, destruction of, or alteration to all or part of the contributing resources that qualify the three (3) historic properties for inclusion in the National Register; and

WHEREAS, AFGSC and AFMC recognize that there are additional properties located on F.E. Warren, Malmstrom, Minot, Hill AFBs, and the UTTR associated with the Minuteman III weapon system that may be affected by the Undertaking; and

WHEREAS, Camp Navajo is included in the Agreement's APE due to its role as a missile and booster storage site in the decommissioning of the Minuteman III weapon system. Although there is no Sentinel-related construction proposed to occur on Camp Navajo, AFGSC and AFMC recognize that the Igloo areas contribute to the Camp Navajo Historic District; and

WHEREAS, the 90th Missile Wing has determined that Building 486, designated as Launch Facility Trainer U-02, located at F.E. Warren AFB, is a historic property because of its association with the

Peacekeeper Missile weapon system, and has committed to preserving the building for public visitation and interpretation through the 2013 *Programmatic Agreement Between Francis E. Warren Air Force Base, and the Wyoming State Historic Preservation Officer, Regarding the Implementation of the Strategic Arms Reduction Treaty at Francis E. Warren Air Force Base Cheyenne, Laramie County, Wyoming*, which is valid until March 2023; and

WHEREAS, AFGSC is considering conversion of Building 486 to support the Sentinel weapon system, and if this conversion is approved, the Undertaking will have an adverse effect on this historic property, diminishing its integrity through physical damage to, destruction of, or alteration to all or part of the building by directly altering the characteristics of the property that qualify it for inclusion in the National Register; and

WHEREAS, AFGSC and AFMC consulted with the State Historic Preservation Officers (SHPOs) for the states of Arizona, Colorado, Montana, Nebraska, North Dakota, Utah, and Wyoming on development of this Agreement, and the SHPOs are Signatories to this Agreement (36 C.F.R. § 800.6(c)(1)(i)); and

WHEREAS, the Undertaking includes Tribal lands within the exterior boundary of the Three Affiliated Tribes of the Mandan, Hidatsa, and Arikara Nation (MHA Nation) at the Fort Berthold Indian Reservation (not Tribal trust or individual Indian allotments), and the MHA Nation may attach religious and cultural significance to historic properties within the Agreement's APE, outside of the Fort Berthold Indian Reservation, that could be affected by the Undertaking pursuant to NHPA Section 101 as codified in 54 U.S.C. § 302706, 36 C.F.R. § 800.2(c)(2), and other legal authorities; and

WHEREAS, AFGSC and AFMC consulted with the MHA Nation on development of this Agreement and will continue regular communication and coordination throughout implementation, and the MHA Nation is a Signatory to this Agreement (36 C.F.R. § 800.6(c)(2)); and

WHEREAS, in accordance with 36 C.F.R. § 800.6(a)(1), AFGSC notified the Advisory Council on Historic Preservation (ACHP) about the Undertaking and that the effects of the Undertaking on historic properties cannot be fully assessed prior to approval of the Undertaking, and invited ACHP to participate in the development of this Agreement pursuant to 36 C.F.R. § 800.6(a)(1)(i)(C), and ACHP elected to participate by formal notification received September 22, 2020, and is a Signatory to this Agreement; and

WHEREAS, in accordance with 36 C.F.R. § 800.10(c), and because the Fort D.A. Russell NHL, Charles M. Russell House and Studio NHL, and Great Falls Portage NHL are located within the Agreement's APE, AFGSC consulted with and invited the National Park Service (NPS) Interior Regions 6, 7, and 8, as the official representative of the SOI, to sign this Agreement as an Invited Signatory (36 C.F.R. § 800.6(c)(2)(iii)); and

WHEREAS, AFGSC and AFMC recognize the Federal Government's special relationship with Tribes and is responsible for government-to-government consultation pursuant to the NHPA, 36 C.F.R. § 800.2(c)(2)(ii), the American Indian Religious Freedom Act (42 U.S.C. § 1996), Executive Orders (EOs) 13007 and 13175, and Sections 3(c) and 12 of the Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. § 3001 *et seq*.); and

WHEREAS, AFGSC and AFMC acknowledge the specialized expertise that Tribes have in identifying and assessing historic properties that may possess religious and cultural significance to them and recognize that each Tribe has its own unique perspective, understanding, and knowledge

about the regions included in the Agreement's APE, the role of these lands in their Tribe's history, and the historic properties located therein; and

WHEREAS, AFGSC invited 63 Tribes, which may attach religious or cultural significance to historic properties that have the potential to be affected by the Undertaking pursuant to 36 C.F.R. § 800.2(c)(2) and other legal authorities, and which are entitled to be consulted about the identification and assessment of effects on historic properties, to consult on the development of this Agreement and these Tribes include the Apache Tribe of Oklahoma; Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation, Montana; Blackfeet Tribe of the Blackfeet Indian Reservation of Montana; Cheyenne and Arapaho Tribes, Oklahoma; Cheyenne River Sioux Tribe of the Cheyenne River Reservation, South Dakota; Chippewa Cree Indians of the Rocky Boy's Reservation, Montana; Comanche Nation, Oklahoma; Confederated Salish and Kootenai Tribes of the Flathead Reservation; Confederated Tribes of the Colville Reservation; Confederated Tribes of the Goshute Reservation, Nevada and Utah; Confederated Tribes of the Umatilla Indian Reservation; Crow Creek Sioux Tribe of the Crow Creek Reservation, South Dakota; Crow Tribe of Montana; Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada; Eastern Shoshone Tribe of the Wind River Reservation, Wyoming; Ely Shoshone Tribe of Nevada; Flandreau Santee Sioux Tribe of South Dakota; Fort Belknap Indian Community of the Fort Belknap Reservation of Montana; Fort Sill Apache Tribe of Oklahoma; Hopi Tribe of Arizona; Jicarilla Apache Nation, New Mexico; Kiowa Indian Tribe of Oklahoma; Little Shell Tribe of Chippewa Indians of Montana; Lower Brule Sioux Tribe of the Lower Brule Reservation, South Dakota; Lower Sioux Indian Community in the State of Minnesota; Mescalero Apache Tribe of the Mescalero Reservation, New Mexico; Minnesota Chippewa Tribe, Minnesota, including the Bois Forte Band, Fond du Lac Band, Grand Portage Band, Leech Lake Band, Mille Lacs Band, and White Earth Band; Navajo Nation, Arizona, New Mexico, & Utah; Nez Perce Tribe; Northern Arapaho Tribe of the Wind River Reservation, Wyoming; Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Montana; Northwestern Band of the Shoshone Nation; Oglala Sioux Tribe; Paiute Indian Tribe of Utah; Pawnee Nation of Oklahoma; Prairie Island Indian Community in the State of Minnesota; Pueblo of Taos, New Mexico; Red Lake Band of Chippewa Indians, Minnesota; Rosebud Sioux Tribe of the Rosebud Indian Reservation, South Dakota; San Juan Southern Paiute Tribe of Arizona; Santee Sioux Nation, Nebraska; Shakopee Mdewakanton Sioux Community of Minnesota; Shoshone-Bannock Tribes of the Fort Hall Reservation; Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada; Sisseton-Wahpeton Oyate of the Lake Traverse Reservation, South Dakota; Skull Valley Band of Goshute Indians of Utah; Southern Ute Indian Tribe of the Southern Ute Reservation, Colorado; Spirit Lake Tribe, North Dakota; Standing Rock Sioux Tribe of North & South Dakota; Te-Moak Tribe of Western Shoshone Indians of Nevada, including the Wells Band; Three Affiliated Tribes of the Fort Berthold Reservation, North Dakota; Turtle Mountain Band of Chippewa Indians of North Dakota; Upper Sioux Community, Minnesota; Ute Indian Tribe of the Uintah & Ouray Reservation, Utah; Ute Mountain Ute Tribe; Yankton Sioux Tribe of South Dakota; and Zuni Tribe of the Zuni Reservation, New Mexico; and

WHEREAS, some Tribes expressed to AFGSC and AFMC that the Undertaking may result in adverse effects on historic properties that have religious and cultural significance to the Tribes, to the associative values that Tribes ascribe to those historic properties, and to the Tribal communities and people to whom those properties are significant; and

WHEREAS, AFGSC and AFMC invited Tribes to sign this Agreement as Concurring Parties (36 C.F.R. § 800.6(c)(3)); and

WHEREAS, AFGSC and AFMC will, as part of the process as outlined in this Agreement, carry out its responsibilities to consult with Tribes that request such consultation regarding historic properties and other sites of Tribal significance to which they attach religious and cultural significance, with the further understanding that, notwithstanding a decision by these Tribes to decline signature or concurrence, AFGSC and AFMC shall continue to consult with these Tribes throughout the implementation of this Agreement; and

WHEREAS, AFGSC and AFMC acknowledge that no provision of this Agreement will be construed by any of the Signatories, Invited Signatories, or Concurring Parties as abridging or debilitating any sovereign powers, established treaties, agreements, or rights of the Tribes, or interfering with the government-to-government relationship between the United States and the Tribes; and

WHEREAS, the Pawnee National Grassland (PNG) of the Arapaho and Roosevelt National Forests and the Helena-Lewis and Clark National Forest (HLCNF) are managed by the U.S. Forest Service in the states of Colorado and Montana, respectively, and are responsible for administration and management of lands and resources within the Agreement's APE, and PNG and HLCNF Forest Supervisors respectively designated DAF as the lead Federal agency for compliance with NHPA Section 106 and 36 C.F.R. Part 800 for portions of the Undertaking occurring on their lands; AFGSC and AFMC consulted with PNG and HLCNF on development of this Agreement, PNG and HLCNF are invited to sign this Agreement as Concurring Parties (36 C.F.R. § 800.6(c)(3)), and this Agreement shall address the U.S. Forest Service undertakings associated with issuance, administration, and management of special use authorizations on the PNG; and

WHEREAS, the Nez Perce (Nee-Me-Poo) National Historic Trail (NPNHT) is managed by the U.S. Forest Service who is responsible for administration and management of lands and resources within the Agreement's APE and NPNHT Administrator designated DAF as the lead Federal agency for compliance with NHPA Section 106 and 36 C.F.R. Part 800 for portions of the Undertaking occurring on its lands and AFGSC consulted with NPNHT on development of this Agreement, and the NPNHT Administrator is invited to sign this Agreement as a Concurring Party (36 C.F.R. § 800.6(c)(3)); and

WHEREAS, the U.S. Army Corps of Engineers (USACE) is responsible for administration and management of lands and resources within the Agreement's APE for activities occurring to existing USACE-managed facilities and infrastructure on other's lands, and for permitting and Navigable Waters and Waters of the U.S. compensatory mitigation for permanent impacts on waters of the U.S. activities conducted pursuant to the Rivers and Harbors Act and the Clean Water Act; and the Omaha District is the primary USACE point of contact for USACE-related actions for the Undertaking; and USACE designated DAF as the lead Federal agency for compliance with Section 106 and 36 C.F.R. Part 800 for portions of the Undertaking occurring on its lands, facilities, and infrastructure and for its Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act permitting including compensatory mitigation activities; and AFGSC and AFMC consulted with USACE Omaha District on development of this Agreement; and USACE Omaha District is invited to sign this Agreement as a Concurring Party (36 C.F.R. § 800.6(c)(3)); and

WHEREAS, the North Central District Office of the Bureau of Land Management (BLM) is responsible for administration and management of lands and resources within the Agreement's APE, and BLM has designated DAF as the lead Federal agency for compliance with Section 106 and 36 C.F.R. Part 800 for portions of the Undertaking occurring on its lands, and AFGSC and AFMC

consulted with BLM on development of this Agreement, and North Central District Office is invited to sign this Agreement as a Concurring Party (36 C.F.R. § 800.6(c)(3)); and

WHEREAS, the Montana Area Office of the Bureau of Reclamation (BOR) is responsible for administration and management of lands and resources within the Agreement's APE , and BOR designated DAF as the lead Federal agency for compliance with Section 106 and 36 C.F.R. Part 800 for portions of the Undertaking occurring on its lands, and AFGSC and AFMC consulted with BOR on development of this Agreement, and Montana Area Office is invited to sign this Agreement as a Concurring Party (36 C.F.R. § 800.6(c)(3)); and

WHEREAS, the Mountain-Prairie Region of the U.S. Fish and Wildlife Service (FWS) is responsible for administration and management of lands and resources within the Agreement's APE, and FWS designated DAF as the lead Federal agency for compliance with Section 106 and 36 C.F.R. Part 800 for portions of the Undertaking occurring on its lands, and AFGSC and AFMC consulted with FWS on development of this Agreement, and Mountain-Prairie Region is invited to sign this Agreement as a Concurring Party (36 C.F.R. § 800.6(c)(3)); and

WHEREAS, Camp Guernsey, Wyoming, and Camp Navajo, Arizona, are managed by the Wyoming Army National Guard and Arizona Army National Guard, respectively, and the Army National Guard provides funding and oversight to state Guard organizations in its capacity as a directorate within the National Guard Bureau (NGB), which is a joint activity of the Department of Defense (DoD) per 10 U.S.C. § 10501, and NGB designated DAF as the lead Federal agency for compliance with Section 106 and 36 C.F.R. Part 800 for portions of the Undertaking occurring on National Guard lands, and AFGSC and AFMC consulted with NGB, the Arizona Department of Emergency and Military Affairs, and the Wyoming Military Department on the development of this Agreement, and they are invited to sign this Agreement as Concurring Parties (36 C.F.R. § 800.6(c)(3)); and

WHEREAS, NPS administers five (5) Congressionally designated national historic trails located within the Agreement's APE and AFGSC and AFMC consulted with NPS on development of this Agreement, and NPS Interior Regions 3, 4, and 5 are invited to sign this Agreement as a Concurring Party (36 C.F.R. § 800.6(c)(3)) in addition to Interior Regions 6, 7, and 8 signing as an Invited Signatory; and

WHEREAS, AFGSC and AFMC propose to construct or modify towers to support communication using government spectrum assigned to DoD to provide telecommunication services required for Sentinel weapon system operations as a component of this Undertaking, and such antennas may only secondarily support commercial services licensed by the Federal Communications Commission (FCC), DAF and FCC agree that FCC will not need to comply with Section 106 with regard to the effects of communications facilities construction or modification that has either undergone or will undergo Section 106 review, or is exempt from Section 106 review, by AFGSC and AFMC under this Agreement; and

WHEREAS, AFGSC invited state government agencies that are responsible for administration and management of lands and resources within the Agreement's APE to consult on development of this Agreement pursuant to 36 C.F.R. § 800.2(c)(3) and those invited are listed in Appendix D; and

WHEREAS, the North Dakota Department of Transportation, Wyoming Department of Transportation, and Wyoming State Parks, Historic Sites and Trails accepted the invitation to consult and consulted with AFGSC on development of this Agreement and they are invited to sign this Agreement as Concurring Parties (36 C.F.R. § 800.6(c)(3)); and

WHEREAS, AFGSC invited county and local governments that retain jurisdictions within the Agreement's APE to consult on development of this Agreement (36 C.F.R. § 800.2(c)(3)) and those invited are listed in Appendix D; and

WHEREAS, the Town of Judith Gap, Montana; Cheyenne County and City of Sidney, both in Nebraska; and Mountrail, Sheridan, and Ward Counties, all of North Dakota; accepted the invitation to consult and consulted with AFGSC on development of this Agreement and they are invited to sign this Agreement as Concurring Parties (36 C.F.R. § 800.6(c)(3)); and

WHEREAS, AFGSC invited nongovernmental organizations and advocacy groups to consult on development of this Agreement pursuant to 36 C.F.R. § 800.2(c)(5) because they have a demonstrated interest in the Undertaking and have a concern for its effects on historic properties; and those invited are listed in Appendix D; and

WHEREAS, the Alliance for Historic Wyoming, Association of Air Force Missileers, Lewis and Clark Trail Heritage Foundation, Lewis and Clark Trust, and Oregon California Trail Association accepted the invitation to consult and consulted with AFGSC and AFMC on development of this Agreement and they are invited to sign this Agreement as Concurring Parties (36 C.F.R. § 800.6(c)(3)); and

WHEREAS, AFGSC and AFMC sought and considered the views of the public regarding the Undertaking and afforded the public the opportunity to provide input on this Agreement through the Section 106 consultation process (36 C.F.R. § 800.2(d)) by making available the draft Agreement on the Sentinel/Ground Based Strategic Deterrent EIS Project website (www.gbsdeis.com) for review and comment, posting newspaper notices that the draft Agreement was available for review, providing multiple methods for submitting written comments, and holding public meetings; and

WHEREAS, AFGSC and AFMC recognize their continued obligations under other federal and state laws, regulations, statutes, rules, policies, and procedures, and that nothing in this Agreement precludes the agencies from abiding by those obligations; and

NOW, THEREFORE, AFGSC; AFMC; MHA Nation; the Arizona SHPO; the Colorado SHPO; the Montana SHPO; the Nebraska SHPO; the North Dakota SHPO; the Utah SHPO; the Wyoming SHPO; NPS, Interior Regions 6, 7, and 8; and ACHP, collectively known as "Signatories," agree that the Undertaking shall be carried out in accordance with the following stipulations in order to take into account effects of the Undertaking on historic properties.

TABLE OF CONTENTS

STIPULATIONS

AFGSC and AFMC, through the Air Force Nuclear Weapons Center, Sentinel Systems Directorate (AFNWC/NX) shall ensure that the following measures are carried out:

I. STANDARDS AND QUALIFICATIONS

A. Professional Qualifications.

1. Pursuant to Section 112(a)(1)(A) of the NHPA (54 U.S.C. § 306131(a)(1)(A)) and 36 C.F.R. § 800.2(a)(1), the AFNWC/NX shall ensure that all cultural resources work carried out pursuant to this Agreement shall be carried out by or under the direct supervision of appropriate professionals meeting the federal qualifications in the discipline appropriate to the properties being treated, as established by the *Secretary of the Interior's Professional Qualifications Standards* (SOI Professional Standards) and published in 48 Federal Register (F.R.) 44716 (1983).

2. To better reflect a Native American voice throughout the report production process, AFNWC/NX shall involve Native American professionals who meet SOI Professional Standards in development of cultural resources plans, reports, and mitigation deliverables prepared pursuant to this Agreement.

B. Standards and Guidelines. AFNWC/NX shall ensure that all cultural resources work carried out pursuant to this Agreement will meet the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (48 F.R. 44716 – 44742, September 23, 1983) and *Secretary of the Interior's Standards for the Treatment of Historic Properties* (36 C.F.R. Part 68) (60 F.R. 35842, July 12, 1995).

C. Tribal Cultural Specialists (TCS). AFNWC/NX shall defer to Tribes for purposes of determining the qualifications of their respective TCS personnel.

D. AFNWC/NX Cultural Resource Personnel. AFNWC/NX will employ a combination of assigned or attached government employees, cooperators, and contractors, who meet the Professional Qualifications in Stipulation I.A, to oversee the implementation of this Agreement.

II. COMMUNICATION AMONG THE PARTIES

A. AFNWC/NX shall utilize electronic means, to include email, Sentinel Cultural Resource-Common Operational Picture (CR-COP) notifications, and communications within the CR-COP system, as the official correspondence method for this Agreement and its provisions.

B. AFNWC/NX shall maintain a contact list of the persons authorized to speak for the Signatories, Concurring Parties, and Tribes and use this list when making notifications, requests, distributions, or other contact under this Agreement.

1. The list will include names, addresses, email addresses, or phone numbers for each respective point(s) of contact.

2. Any Party may add to or change its authorized contact person(s) by providing notification of the addition or change to AFNWC/NX.

3. Contact information may be updated as needed without an amendment to this Agreement.

C. AFNWC/NX shall develop, maintain, operate, and employ a geographic information system (GIS) web-based system, the Sentinel CR-COP, to assist in providing all Signatories, Concurring Parties, and Tribes with an interoperable system for near real-time tracking of cultural resource activities.

   1. The CR-COP system will serve as the primary means of communication for consulting on Management Summary Reports, Work Plans, coordinating survey, monitoring, and data recovery activities, distributing preliminary field results, and consulting on determinations of eligibility.

   2. AFNWC/NX shall provide one (1) ESRI desktop GIS license, in addition to standard ArcGIS online access, for the term of the Undertaking to each consulting Tribe that requests a license. Tribes may request a license throughout the life of the Agreement.

   3. AFNWC/NX shall also provide access to online GIS training to all consulting SHPOs and Tribes and provide training for up to two (2) individuals per SHPO and Tribe. SHPOs and Tribes may request access to training throughout the life of the Agreement.

   4. AFNWC/NX shall request Signatories, Concurring Parties, and Tribes to indicate their level of interest in the development and review of Wing Survey Plans, Work Plans, Management Summaries, Technical Reports, and/or Synthetic Reports by geographic location through the CR-COP. This user input will facilitate the system sending notification of product review requirements to interested parties.

   5. The CR-COP will also make available to Tribes data available to DAF in the identification of historic properties to include, but not limited to, Class I survey data, geophysical survey data (e.g., light detection and ranging [LiDAR], multispectral, historic imagery), sensitivity models, and relevant supporting documentation.

   6. When distributing material through CR-COP, the day a document is posted and a notification email is sent to the appropriate Signatories, Concurring Parties, and Tribes shall count as "Day 0." The review time period allocated for each document will not begin until the next business day. Business days are Monday through Friday, excluding federal holidays. Comments must be posted by 11:59 p.m. Mountain Time on the last day of the review period. Reviewers may request additional time, as needed, on a case-by-case basis. In order to reduce workload, provide predictability, and establish a battle rhythm, AFNWC/NX will, to the maximum extent possible, post documents to CR-COP on the last day of the business week.

D. When requesting comments on a draft or draft final document, AFNWC/NX shall clearly indicate within the document all edits and changes made to the draft since the previous reviewed version.

E. In addition to distributing and managing project cultural resource data and materials through CR-COP, AFNWC/NX will submit final documents, such as the Technical Reports, which contain the final, full determinations of eligibility and completed site forms, to applicable SHPOs, Tribal Historic Preservation Officers (THPO), Tribes, and Federal agencies through their existing data management systems and processes. Hard copies will only be submitted where required by existing SHPO, THPO, or other Federal agency submittal requirements.

F. AFNWC/NX shall continue including all Signatories, Concurring Parties, and Tribes in consultation correspondence and implementation of this Agreement, notwithstanding a decision by a Consulting Party to decline signature or concurrence, until the Consulting Party informs AFNWC/NX that they no longer want to receive consultation correspondence on the implementation.

III. TRIBAL CONSULTATION

A. AFNWC/NX shall conduct all interactions with Tribes in accordance with the Tribal Consultation Protocols as presented in Appendix E.

B. AFNWC/NX shall afford the Tribes a reasonable and meaningful opportunity to be involved in the implementation of commitments; in the development of deliverables as called for in this Agreement; and to review and comment on any draft plan, report, or deliverable associated with the Undertaking, including, but not limited to, documentation related to the identification and evaluation of historic properties, the assessment of effects, the evaluation of alternatives to avoid or minimize adverse effects, the development of appropriate mitigation actions, and the disposition and treatment of human remains and objects under NAGPRA and relevant state statutes.

C. AFNWC/NX shall respond to any request made by a Tribe for government-to-government consultation and/or confidentiality regarding their concerns about the effects of the Undertaking on properties of religious and cultural significance to the Tribe.

D. AFNWC/NX shall afford any Tribes who are not already Concurring Parties to this Agreement the opportunity to become a Concurring Party at their discretion.

E. AFNWC/NX acknowledges that the Federal Government has a special and unique relationship with Tribes as set forth in the Constitution of the United States, treaties, statutes, and court decisions, and that consultation with Tribes should be conducted in a sensitive manner respectful of Tribal sovereignty. Nothing in this Agreement alters, amends, repeals, interprets, or modifies Tribal sovereignty, treaty rights, or other rights of a Tribe, or preempts, modifies, or limits the exercise of such rights, as set forth in 36 C.F.R. § 800.2(c)(2)(ii)(B).

IV. CONFIDENTIALITY

A. AFNWC/NX shall maintain confidentiality of sensitive information and intellectual property regarding historic properties to which a Tribe attaches religious or cultural significance to the maximum extent allowed by federal law. Any documents or records AFNWC/NX has in its possession are subject to the Freedom of Information Act (FOIA) (5 U.S.C. § 552 *et seq*.) and its exemptions, as applicable. In the event that a FOIA request is received for records or documents that relate to a historic property to which a Tribe attaches religious or cultural significance and that contain information that AFNWC/NX is authorized to withhold from disclosure by statute, including Section 304 of the NHPA (54 U.S.C. § 307103; 36 C.F.R. § 800.11(c)), Section 9 the Archaeological Resources Protection Act (16 U.S.C. § 470hh), and Section (b)(3) of the FOIA (5 U.S.C. § 552), AFNWC/NX shall consult with such Tribe prior to making a determination in response to such a FOIA request whether to withhold particular records and/or documents from disclosure including relevant trade secret and intellectual property protection statutes.

B. AFNWC/NX shall comply with EO 13556 and 32 C.F.R. Part 2002 standards for managing information that requires safeguarding or dissemination controls. AFNWC/NX shall also comply with the National Archives and Records Administration's Controlled Unclassified Information (CUI) policy and Department of Defense Instruction 5200.48, *Controlled Unclassified Information (CUI)*, for designating, handling, and decontrolling sensitive information related to this Agreement that qualifies as CUI.

C. AFNWC/NX shall provide the Signatories, Concurring Parties, and Tribes sufficient information to meaningfully consult with AFNWC/NX, while honoring AFNWC/NX commitments to the Tribes to restrict the dissemination of confidential information. Any review party may request additional information from AFNWC/NX to complete reviews and provide comments. If, however, AFNWC/NX determines that the requested information may be culturally sensitive to one (1) or more Tribes, AFNWC/NX will meet with the review party and the associated Tribe(s) to address the request for information through dialogue. If this effort fails to result in an accommodation that meets the needs of the review party and the associated Tribe(s), AFNWC/NX shall resolve the dispute through formal means in accordance with Stipulation XXVI.

D. AFNWC/NX shall ensure that all Signatories, Concurring Parties, and Tribes are aware of the following:

   1. Sensitive information, including CUI, shared with the Signatories, Concurring Parties, and Tribes by AFNWC/NX in furtherance of the goals of this Agreement is protected from further release.

   2. Confidentiality of information received under this Agreement must be maintained.

   3. Access is limited to those people specifically designated as representatives, as appropriate.

   4. Such information provided under this Agreement will not be duplicated or shared outside of the Signatories, Concurring Parties, and Tribes or their specifically authorized representatives.

V. WING SURVEY PLANS

AFNWC/NX has developed Wing Survey Plans (WSPs), which are comprehensive, general cultural resources survey plans that were developed and consulted upon prior to the establishment of this Agreement. An individual WSP was produced for each of the three (3) missile fields at F.E. Warren AFB, which includes Camp Guernsey; Malmstrom AFB; and Minot AFB and a combined plan was produced for Hill AFB and the UTTR. These plans include historic contexts, literature reviews, research designs, methodologies, and identification of regional data gaps. The methodology section and other key portions of these plans were incorporated into Appendix G (*Standard Approaches for Identification and Evaluation of Historic Properties*) of this Agreement.

A. AFNWC/NX shall utilize each WSP as the foundation for, and will be referenced by, the various subsequent Work Plans, Monitoring Plans, Data Recovery Plans, and Technical Reports developed over the course of the Sentinel project. When applicable, reports within a missile field will refer back to the applicable WSP by reference and will not duplicate the material contained in the WSP. AFNWC/NX shall make the existing WSPs available through the CR-COP.

B. AFNWC/NX shall review and update the applicable WSP related to each missile field once prior to the development of Work Plans supporting the commencement of construction at the respective missile field. Relevant information will be incorporated into the individual Work Plans for work on Hill AFB and UTTR.

1. WSP Update Draft Development Tasks.

a) Based on the anticipated construction schedule, AFNWC/NX shall direct the cultural resource contractor (Contractor) to develop the appropriate corresponding WSP Update within thirty (30) business days of notification.

b) AFNWC/NX shall direct the Contractor to identify, to include at minimum a review of the applicable SHPOs' records databases and the applicable installation's Integrated Cultural Resources Management Plan, and analyze the cultural resource investigations that have occurred within the missile field since the initial WSP was completed, and as appropriate, update the text and associated GIS files to reflect the latest data.

c) AFNWC/NX shall direct the Contractor to incorporate all additional data about sites significant to Tribes that has been provided to AFNWC/NX through consultation.

d) Upon receipt of the draft WSP from the Contractor, AFNWC/NX shall have no more than ten (10) business days to review the draft and coordinate with the Contractor to incorporate necessary edits.

2. WSP Update Consultation Tasks.

a) AFNWC/NX shall publish the draft WSP Update on the CR-COP for review by appropriate Signatories, Concurring Parties, and Tribes.

b) The appropriate Signatories, Concurring Parties, and Tribes shall have twenty (20) business days to review and provide comments via CR-COP.

c) AFNWC/NX has ten (10) business days to review comments received, resolve any conflicts, and finalize the WSP Update.

3. Final WSP Update and Implementation.

a) AFNWC/NX shall publish the draft final WSP on the CR-COP for review by appropriate Signatories, Concurring Parties, and Tribes.

b) The appropriate Signatories, Concurring Parties, and Tribes shall have ten (10) business days to review and provide final comments to AFNWC/NX.

c) Within ten (10) business days of receiving final comments from the appropriate Signatories, Concurring Parties, and Tribes, AFNWC/NX shall publish the final WSP on the CR-COP (which may be the same as the draft final WSP) and AFNWC/NX shall provide the Contractor clearance to implement the WSP.

C. General Cultural Resource Support Activities. Simultaneous with the direction to complete a WSP Update, AFNWC/NX will also begin a series of preparatory analytical actions to inform and facilitate the production of all Work Plans. AFNWC/NX will prioritize the following support activities so that all analysis is completed prior to or in conjunction with the development of Work Plans. When possible, data resulting from the following support

activities will be made available to Signatories, Concurring Parties, and Tribes through CR-COP.

1. Native American Developed Sensitivity Model. AFNWC/NX will coordinate with the U.S. Army Corps of Engineers Tribal Nations Technical Center of Excellence (TNTCX) for the production of sensitivity models developed in coordination with Tribes.
2. LiDAR and Multispectral Analysis. AFNWC/NX shall direct the Contractor to conduct LiDAR and multispectral archaeological prospection analysis on available data.
3. Property Record Search. AFNWC/NX shall direct the Contractor to utilize the property records to support association of Euro-American sites.
4. Imagery Analysis. AFNWC/NX shall direct the Contractor to conduct an analysis of existing aerial imagery (modern and historic) to identify potential structures, sites, and associated features within sites.
5. Viewshed Analysis. AFNWC/NX shall direct the Contractor to complete a viewshed analysis of each MAF, LF, tower, on-base construction site, laydown yard, and work camp.
6. Burial Identification. AFNWC/NX shall direct the Contractor to analyze existing information to identify known and potential burial/grave locations.

VI. SURVEY WORK PLAN DEVELOPMENT

A. Survey Work Plan (Survey WP) Pre-development Tasks. The appropriate SATF shall provide a construction schedule to AFNWC/NX that outlines the various LOEs to be implemented for each grouping of construction activities. Via the CR-COP, AFNWC/NX shall notify appropriate Signatories, Concurring Parties, and Tribes of the submitted construction schedule, nature and area(s) of construction activities, and the commencement of Survey WP development.

B. Draft Survey WP Development Tasks.

1. AFNWC/NX shall assess the requirement of the construction schedule and will determine the number of Survey WPs needed based on location, construction start date, land acquisition status, and/or LOE.
2. AFNWC/NX shall direct the Contractor to develop Survey WPs within twenty (20) business days of notification.
3. AFNWC/NW shall direct the Contractor to prepare draft Survey WP(s) using the standardized practices as found in Appendix B for the APE and Appendix G for identification methodology; will reference and incorporate, when possible, the updated WSP and Cultural Resource Support Activities (Stipulation V.C.); and will take into account previous cultural resource investigations that have occurred in the APEs.
4. AFNWC/NW shall direct the Contractor to prepare the draft Survey WPs using the below standards for each LOE. Construction activities are organized into five (5) LOEs. Each LOE has its own pre-construction survey methodology and associated standard APE for Setting and Physical Effects based on the planned activities associated with the type of construction (Appendix B).

a) LOE #1 – Replacement and/or Conversion of Existing MAFs and LFs.

i. AFNWC/NX shall conduct pre-construction identification, through consultation and analysis of existing information, within the Setting APE, a half (½) mile radius surrounding the LFs and 5-mile radius surrounding the MAFs.

ii. AFNWC/NX shall conduct pre-construction field survey of the 310-foot-wide Physical APE surrounding the security fence of each MAF and LF.

iii. No cultural resources survey will occur within the security fence due to the nature of construction activities in this area during the original construction of the facilities in the 1960s.

b) LOE #2 – Upgrading Existing and Constructing New Utility Corridors.

i. AFNWC/NX shall conduct pre-construction identification, through consultation and analysis of existing information, within the Physical APE, a 125- to 200-foot-wide area. The width of the APE will vary based on location of the utility corridor and method of construction. There is no standard Setting APE because the utilities will be underground. Should Project activities result in the placement of an above-ground object or structure, AFNWC/NX will identify and evaluate a Setting APE on a case-by-case basis.

ii. AFNWC/NX shall conduct pre-construction field survey of the temporary construction easement and a 50-foot-wide buffer area. When the buffer area extends beyond a public road or railroad and DAF does not have legal access to enter the adjacent property, the survey area will terminate at the public road or railroad.

iii. AFNWC/NX will not survey paved or gravel road surfaces unless the road itself is potentially a historic property.

c) LOE #3 – Construction of New Communications Towers.

i. AFNWC/NX shall conduct pre-construction identification, through consultation and analysis of existing information, of the 5-acre construction work area; of the 100-foot-wide buffer surrounding the work area; and within the Setting APE, a twenty (20)-mile radius surrounding each communication tower location.

ii. AFNWC/NX shall conduct pre-construction field survey of the 5-acre construction work area and the 100-foot-wide buffer surrounding the work area. For associated utility lines, pre-construction field survey will be conducted of the 25-foot-wide temporary construction easement plus the 25-foot-wide buffer on each side of the corridor. For associated access roads, pre-construction field survey will be conducted of the 50-foot-wide construction easement plus the 25-foot-wide buffer on each side of the corridor.

iii. When the buffer area extends beyond a public road or railroad and DAF does not have legal access to enter the adjacent property, the survey area will terminate at the public road or railroad.

iv. AFNWC/NX will, to the extent practicable, avoid purchasing property for the construction of communication towers when the results of pre-construction

cultural resource surveys indicate the presence of historic properties or sites of significance to Tribes.

v. If DAF purchases land, which has the presence of known historic property or sites of significance to Tribes, AFNWC/NX shall consult with the appropriate Signatories, Tribes, Federal land managing agencies, and other relevant Concurring Parties in determining the exact placement of the communication tower and associated infrastructure (e.g., footings), which will be located within the 5-acre construction work area.

d) LOE #4 – Construction and/or Renovation of Existing Installation Facilities and Utilities.

i. AFNWC/NX shall conduct pre-construction identification, through consultation and analysis of existing information, within the Setting APE as determined on a case-by-case basis.

ii. AFNWC/NX shall assess the need to conduct pre-construction field survey to identify historic properties within the APE of individual actions proposed to occur within the boundaries of an installations, which have previously been extensively surveyed.

iii. If AFNWC/NX decides a pre-construction field survey is needed, it shall conduct the survey of the APE, as well as the 100-foot-wide buffer surrounding the work area. For utility lines, pre-construction survey will be conducted of the 25-foot-wide temporary construction easement plus the 25-foot-wide buffer on each side of the corridor. Survey WPs for these locations will take into account previously conducted cultural resource investigations that have occurred within the APEs.

iv. Individual actions proposed to occur within the Fort D.A. Russell NHL will accord special consideration regarding the NHL per 36 C.F.R. § 800.10.

e) LOE #5 – Development of Workforce Hubs and Construction Laydown Areas.

i. AFNWC/NX shall conduct pre-construction identification, through consultation and analysis of existing information, within the Setting APE, a one (1)-mile radius surrounding the hub or laydown area.

ii. AFNWC/NX shall conduct pre-construction field survey of the hub area or laydown area plus the 100-foot-wide buffer surrounding the area. For associated utility lines, pre-construction field survey will be conducted of the 25-foot-wide temporary construction easement plus the 25-foot-wide buffer on each side of the corridor. For associated access roads, pre-construction field survey will be conducted of the 50-foot-wide construction easement plus the 25-foot-wide buffer on each side of the corridor.

5. AFNWC/NX will initiate coordination with Tribes to ensure the minimum number of TCSs required in the draft Survey WP will be available.

6. Upon receipt of the draft Survey WP from the Contractor, AFNWC/NX shall have no more than ten (10) business days to review the draft and coordinate with the Contractor to incorporate necessary edits.

C. Draft Survey WP Consultation Tasks.

1. AFNWC/NX shall publish the draft Survey WP on the CR-COP for review by appropriate Signatories, Concurring Parties, and Tribes.

2. The appropriate Signatories, Concurring Parties, and Tribes shall have fifteen (15) business days to review and provide comments via CR-COP.

3. AFNWC/NX has five (5) business days to review comments received, resolve any conflicts, and finalize the Survey WP(s).

   a) AFNWC/NX may further modify the APEs for individual actions should additional relevant information become available through the consultation process.

   b) AFNWC/NX may modify the approaches for individual actions should additional relevant information become available through the consultation process.

D. Final Survey WP and Implementation.

1. AFNWC/NX shall publish the draft final Survey WP on the CR-COP for review by appropriate Signatories, Concurring Parties, and Tribes.

2. The appropriate Signatories, Concurring Parties, and Tribes shall have five (5) business days to review and provide final comments to AFNWC/NX.

3. Within five (5) business days of receiving final comments from the appropriate Signatories, Concurring Parties, and Tribes, AFNWC/NX shall publish the final Survey WP on the CR-COP (which may be the same as the draft final Survey WP) and AFNWC/NX shall provide the Contractor clearance to implement the Survey WP.

4. AFNWC/NX will not authorize survey fieldwork to proceed until all required Archaeological Resources Protection Act (ARPA) or similiar state permits are issued to personnel conducting fieldwork.

VII. SURVEY MANAGEMENT SUMMARY DEVELOPMENT

A. Draft Survey Management Summary (Survey MS) Development Tasks. Upon the completion of pre-construction field survey, AFNWC/NX shall direct the Contractor to develop a Survey MS within fifteen (15) business days of the notification.

1. The Survey MS will be a brief field report composed and distributed following the completion of survey for a given area of construction. The Survey MS will focus on describing what work was completed, what resources were identified, what data was recovered, and any significant issues that arose in completing the work, with an emphasis on expediting project decision making. The Survey MS will include the following, as applicable:

   a) Input from TCSs;

   b) A description of the action(s);

   c) A description and map of the APE for the action(s);

   d) A narrative and an inventory coverage map summarizing the efforts to identify cultural resources in the APE for the action(s);

e) A complete list of cultural resources within the APE for the action(s) and the recommended National Register eligibility status of each resource if a determination can be made;

f) A determination assessment of effect recommendation;

g) Avoidance and minimization recommendations; and

h) Data recovery and mitigation recommendations.

2. Upon receipt of a draft Survey MS, AFNWC/NX shall spend no more than five (5) business days reviewing the draft Survey MS, making their recommended determinations of eligibility for any resource found during fieldwork, and assessing effects of the LOE to the identified historic properties. AFNWC/NX shall coordinate with the appropriate installation Civil Engineer Squadron or Department of Public Works in making their recommended determinations of eligibility.

3. AFNWC/NX shall alert appropriate Signatories, Concurring Parties, and Tribes, via the CR-COP, of the completion of fieldwork and the commencement of Survey MS development.

B. Draft Survey MS Consultation Tasks.

1. AFNWC/NX shall publish the draft Survey MS and a memorandum stating AFNWC/NX's determinations of eligibility and effects determination and post them on the CR-COP for review by appropriate Signatories, Concurring Parties, and Tribes.

2. The appropriate Signatories, Concurring Parties, and Tribes shall have fifteen (15) business days to review and provide comments via CR-COP.

3. AFNWC/NX has five (5) business days to review comments received, resolve any conflicts, and finalize the draft Survey MS.

4. When making the final assessment of effects, AFNWC/NX shall take into account the comments and input provided by the SHPOs/THPO, Tribes, Federal land managing agencies, and other Concurring Parties, as appropriate.

C. Final Survey MS and Implementation.

1. AFNWC/NX shall publish a draft final Survey MS on the CR-COP for review by appropriate Signatories, Concurring Parties, and Tribes.

2. The appropriate Signatories, Concurring Parties, and Tribes shall have five (5) business days to review and provide any additional final comments to AFNWC/NX.

3. Within (5) business days of receiving final comments from the appropriate Signatories, Concurring Parties, and Tribes, AFNWC/NX shall publish the final Survey MS on the CR-COP (which may be the same as the draft final Survey MS) and authorize the Contractor to develop a Data Recovery Work Plan (Stipulation VIII) and/or Monitoring Work Plan (Stipulation X), as appropriate.

VIII. DATA RECOVERY WORK PLAN DEVELOPMENT

A. Data Recovery Work Plan (Data Recovery WP) Pre-development Tasks. AFNWC/NX shall assess the requirement of data recovery based on the construction schedule, the number and nature of potentially impacted sites, and their initial determination of eligibility, and will determine whether a Data Recovery WP is needed. AFNWC/NX shall alert appropriate Signatories, Concurring Parties, and Tribes, via the CR-COP, of the impending issuance of a Data Recovery Plan for review to happen within ten (10) business days of said notice.

B. Draft Data Recovery WP Development Tasks.

1. AFNWC/NX shall direct the Contractor to develop the Data Recovery WP within five (5) business days.

2. AFNWC/NX shall direct the Contractor to prepare the draft Data Recovery WP using the standardized practices as found in Appendix B for APE and Appendix G for identification methodology. The draft Data Recovery WP will reference the preceding Survey MS, and when possible, the updated WSP (Stipulation V) for that location. The draft Data Recovery WP will include details such as, but not limited to excavation volume, excavation unit placement, stratigraphy profile recordation, photography, procedures for total station mapping of features and diagnostic artifacts, and sampling techniques (including bulk soil, chronometric, pollen coring, and other special sampling, where appropriate).

3. Upon receipt of a draft Data Recovery WP from the Contractor, AFNWC/NX shall have no more than five (5) business days to review the draft and coordinate with the Contractor to incorporate necessary edits.

C. Draft Data Recovery WP Consultation Tasks.

1. AFNWC/NX shall publish the draft Data Recovery WP on the CR-COP for review by appropriate Signatories, Concurring Parties, and Tribes.

2. The appropriate Signatories, Concurring Parties, and Tribes shall have fifteen (15) business days to review and provide comments via CR-COP.

3. AFNWC/NX has five (5) business days to review comments received, resolve any conflicts, and finalize a draft Data Recovery WP.

D. Final Data Recovery WP and Implementation.

1. AFNWC/NX shall publish the draft final Data Recovery WP on CR-COP for review by appropriate Signatories, Concurring Parties, and Tribes.

2. The appropriate Signatories, Concurring Parties, and Tribes shall have five (5) business days to review and provide final comments to AFNWC/NX via CR-COP.

3. Within five (5) business days of receiving final comments from the appropriate Signatories, Concurring Parties, and Tribes, AFNWC/NX shall publish the final Data Recovery WP on the CR-COP (which may be the same as the draft final Data Recovery WP) and authorize the Contractor to implement the Data Recovery WP.

4. AFNWC/NX will not authorize data recovery fieldwork to proceed until all required ARPA or other state permits are issued to personnel conducting fieldwork.

IX. DATA RECOVERY MANAGEMENT SUMMARY DEVELOPMENT

A. Data Recovery Management Summary (Data Recovery MS) Development Tasks. Upon the completion of data recovery work, AFNWC/NX shall direct the Contractor to develop a Data Recovery MS within five (5) business days of the notification.

1. A Data Recovery MS is a brief field report composed and distributed following the completion of data recovery for a given area of construction. It will focus on describing the type of work completed, what data was recovered, any significant issues that arose in completing the work, and impacts to existing eligibility determinations or future work plans with an emphasis on expediting project decision making.

2. AFNWC/NX shall notify appropriate Signatories, Concurring Parties, and Tribes, via the CR-COP, of the completion of data recovery and the impending issuance of the Data Recovery MS for review to happen within ten (10) business days of said notice.

3. Upon receipt of a draft Data Recovery MS from the Contractor, AFNWC/NX shall spend no more than five (5) business days reviewing a draft Data Recovery MS.

B. Draft Data Recovery MS Consultation Tasks.

1. AFNWC/NX shall publish a draft Data Recovery MS on the CR-COP for review by appropriate Signatories, Concurring Parties, and Tribes.

2. The appropriate Signatories, Concurring Parties, and Tribes shall have fifteen (15) business days to review and provide comments via CR-COP.

3. AFNWC/NX has five (5) business days to review comments received, resolve any conflicts, and finalize the draft Data Recovery MS.

C. Final Data Recovery MS and Implementation.

1. AFNWC/NX shall publish a draft final Data Recovery MS on the CR-COP for review by appropriate Signatories, Concurring Parties, and Tribes.

2. The appropriate Signatories, Concurring Parties, and Tribes shall have five (5) business days to review and provide final comments to AFNWC/NX.

3. Within five (5) business days of receiving final comments from the appropriate Signatories, Concurring Parties and Tribes, AFNWC/NX shall publish the final Data Recovery MS on the CR-COP (which may be the same as the draft final Data Recovery MS).

4. Once the final Data Recovery MS is published on the CR-COP, AFNWC/NX shall authorize ground disturbing activities to commence, in accordance with the appropriate Monitoring Work Plan (Stipulation X).

X. MONITORING WORK PLAN DEVELOPMENT

A. Monitoring Work Plan (Monitoring WP) Pre-development Tasks. AFNWC/NX shall assess the requirement of the construction schedule and will determine the number of Monitoring WPs needed based on location, construction start date, and/or type of work. AFNWC/NX shall notify appropriate Signatories, Concurring Parties, and Tribes, via the CR-COP, of the

submitted construction schedule, nature and area(s) of construction activities, and the commencement of Monitoring WP development.

B. Monitoring WP Development Tasks.

1. AFNWC/NX shall direct the Contractor to develop the Monitoring WP within ten (10) business days of notification.

2. AFNWC/NX shall direct the Contractor to prepare the draft Monitoring WP to cover procedures for inadvertent discoveries and detail any specifics for monitoring all locations within a given construction activity area, such as fencing requirements and tailored avoidance procedures, if appropriate (Stipulation XIV). The draft Monitoring WP will use the standardized practices as found in Appendix B for APE and Appendix G for identification methodology. The draft Monitoring WP will cover the same portion of the overall project area as a preceding Survey WP (Stipulation VI) and Survey MS (Stipulation VII).

3. AFNWC/NX will initiate coordination with Tribes to ensure the minimum number of TCS required in the draft Monitoring WP will be available.

4. Upon receipt of a draft Monitoring WP from the Contractor, AFNWC/NX shall have no more than ten (10) business days to review the draft and coordinate with the Contractor to incorporate necessary edits.

C. Monitory WP Consultation Tasks.

1. AFNWC/NX shall publish a draft Monitoring WP on the CR-COP for review by appropriate Signatories, Concurring Parties, and Tribes.

2. The appropriate Signatories, Concurring Parties, and Tribes shall have fifteen (15) business days to review and provide comments via CR-COP.

3. AFNWC/NX has five (5) business days to review comments received, resolve any conflicts, and finalize the draft Monitoring WP.

D. Final Monitoring WP and Implementation.

1. AFNWC/NX shall publish the draft final Monitoring WP on the CR-COP for review by appropriate Signatories, Concurring Parties, and Tribes.

2. The appropriate Signatories, Concurring Parties, and Tribes shall have five (5) business days to review and provide final comments to AFNWC/NX.

3. Within five (5) business days of receiving final comments from the appropriate Signatories, Concurring Parties, and Tribes, AFNWC/NX shall publish the final Monitoring WP on the CR-COP (which may be the same as the draft final Monitoring WP) and authorize the Contractor to implement the Monitoring WP.

XI. MONITORING MANAGEMENT SUMMARY DEVELOPMENT

A. Draft Management Summary (Monitoring MS) Development Tasks. Upon the completion of construction work, AFNWC/NX shall direct the Contractor to develop a Monitoring MS within five (5) business days of notification.

1. The Monitoring MS will be a brief field report composed and distributed following the completion of monitoring for a given area of construction. The Monitoring MS will focus on describing what work was completed, what resources were identified, what data was recovered, and any significant issues that arose in completing the work, with an emphasis on expediting project decision making.

2. Upon receipt of the draft Monitoring MS, AFNWC/NX shall spend no more than five (5) business days reviewing the draft Monitoring MS.

3. AFNWC/NX shall alert appropriate Signatories, Concurring Parties, and Tribes, via the CR-COP, of the completion of construction work and the commencement of Monitoring MS development.

B. Draft Monitoring MS Consultation Tasks.

1. AFNWC/NX shall publish the draft Monitoring MS on the CR-COP for review by appropriate Signatories, Concurring Parties, and Tribes.

2. The appropriate Signatories, Concurring Parties, and Tribes, shall have fifteen (15) business days to review and provide comments via CR-COP.

3. AFNWC/NX has five (5) business days to review comments received, resolve any conflicts, and finalize the draft Monitoring MS.

C. Final Monitoring MS and Implementation.

1. AFNWC/NX shall publish a draft final Monitoring MS on the CR-COP for review by appropriate Signatories, Concurring Parties, and Tribes.

2. The appropriate Signatories, Concurring Parties, and Tribes shall have five (5) business days to review and provide any additional final comments to AFNWC/NX.

3. Within (5) business days of receiving final comments from the appropriate Signatories, Concurring Parties, and Tribes, AFNWC/NX shall publish the final Monitoring MS on the CR-COP (which may be the same as the final Monitoring MS) and authorize the Contractor to develop a Monitoring Plan and/or Data Recovery Plan, as appropriate.

XII. TECHNICAL REPORTS DEVELOPMENT

A. Draft Technical Report Development Tasks. Upon publishing the last final Monitoring MS for a grouping of associated LOE construction activities, AFNWC/NX shall direct the Contractor to develop a Technical Report within 120 business days of the request.

1. A Technical Report is a more comprehensive field report composed and distributed following the completion of monitoring for a given area of construction. It will include and consolidate all information from the preceding Survey, Data Recovery, and Monitoring WPs and MSs for a given area. Technical Reports will focus on describing the type of work completed, what data was recovered, any significant issues that arose in completing the work, and impacts to existing eligibility determinations or future work plans with an emphasis on expediting project decision making. Technical Report submissions will include all appropriate standard state or MHA Nation resource forms.

2. Upon receipt of a draft Technical Report from the Contractor, AFNWC/NX shall spend no more than twenty (20) business days reviewing a draft Technical Report.

3. AFNWC/NX shall notify the appropriate Signatories, Concurring Parties, and Tribes, via the CR-COP, of the completion of the draft Technical Report and the impending issuance of the draft Technical Report for review to happen within twenty (20) business days of said notice.

B. Draft Technical Report Consultation Tasks.

1. AFNWC/NX shall publish a draft Technical Report on the CR-COP for review by appropriate Signatories, Concurring Parties, and Tribes.

2. AFNWC/NX shall submit a memorandum with the Technical Report to the appropriate SHPO and/or THPO requesting formal statutory concurrence on the Technical Report and the determinations of eligibilities contained within it.

3. The appropriate Signatories, Concurring Parties, and Tribes shall have forty (40) business days to review and provide comments via CR-COP.

4. AFNWC/NX has ten (10) business days to review comments received, resolve any conflicts, and finalize the draft Technical Report.

C. Final Technical Report and Implementation.

1. AFNWC/NX shall publish a draft final Technical Report on the CR-COP for review by appropriate Signatories, Concurring Parties, and Tribes.

2. The appropriate SHPOs and/or THPO shall have fifteen (15) business days to review and provide formal statutory concurrence to AFNWC/NX on the Technical Report and the determinations of eligibility contained within it.

3. All other Signatories, Concurring Parties, and Tribes shall have fifteen (15) business days to review and provide final comments to AFNWC/NX.

4. Within five (5) business days of receiving final comments from the appropriate Signatories, Concurring Parties, and Tribes, AFNWC/NX shall publish the final Technical Report on the CR-COP (which may be the same as the draft final Technical Report).

XIII. SYNTHETIC REPORT DEVELOPMENT

AFNWC/NX shall prepare a Synthetic Report of the results of cultural resource work conducted to meet the requirements of this Agreement for each of the three (3) missile fields. Each report will be a comprehensive synthesis incorporating all relevant findings and analysis from the preceding Technical Reports from a given missile field and an assessment in the context of the broader region, existing literature, and historic context. The three (3) Synthetic Reports will strive to address broader, region-specific research questions, draw potential conclusions, and address new research avenues resulting from the project findings. These will be written for a broader, more general audience, in addition to the professional cultural resources community. Synthetic Reports will be generated as part of the provisions for "Compensatory Mitigation to Resolve the Adverse Effects of the Undertaking" (Stipulation XV.C.4).

A. Draft Synthetic Report Development Tasks.

1. AFNWC/NX shall direct the Contractor to develop a Synthetic Report upon completion of all construction and cultural resource activities within a missile field. This notification will be given no later than twenty-one (21) business days after the appropriate SHPO(s) and/or THPO have provided concurrence on and accepted the final technical report for each missile field. AFNWC/NX shall direct the Contractor to complete the draft Synthetic Report within 240 business days of notification.

2. Upon receipt of the draft Synthetic Report from the Contractor, AFNWC/NX shall have no more than forty (40) business days to review the draft and coordinate with the Contractor to incorporate necessary edits.

B. Draft Synthetic Report Consultation Tasks.

1. AFNWC/NX shall publish the draft Synthetic Report on the CR-COP for review by appropriate Signatories, Concurring Parties, and Tribes.

2. The appropriate Signatories, Concurring Parties, and Tribes shall be given forty (40) business days to review and provide comments via CR-COP.

3. AFNWC/NX has twenty (20) business days to review comments received, resolve any conflicts, and finalize the draft Synthetic Report.

C. Final Synthetic Report.

1. AFNWC/NX shall publish a draft final Synthetic Report on the CR-COP for review by appropriate Signatories, Concurring Parties, and Tribes.

2. The appropriate Signatories, Concurring Parties, and Tribes shall have twenty (20) business days to review and provide final comments to AFNWC/NX.

3. Within five (5) business days of receiving final comments from the appropriate Signatories, Concurring Parties and Tribes, AFNWC/NX shall publish the final Synthetic Report on the CR-COP (which may be the same as the draft final Synthetic Report).

4. AFNWC/NX and the Contractor will also produce a publicly releasable version for posting on the Project's public-facing website. AFNWC/NW shall redact all sensitive information per Stipulation IV.

XIV. AVOIDANCE AND MINIMIZATION OF ADVERSE EFFECTS

A. AFNWC/NX shall implement processes and procedures during all ground-disturbing activities, including, but not limited to, construction, ongoing maintenance, staging, laydown, land reclamation, parking, and driving of vehicles and equipment, of the Undertaking to reduce the likelihood for unanticipated adverse effects to historic properties.

1. AFNWC/NX shall implement erosion control methods and highly visible temporary construction fencing to minimize the potential for construction and other ground-disturbing activities to indirectly affect nearby historic properties and other significant cultural resources.

2. AFNWC/NX shall ensure that all ground-disturbing activities occur only within the APEs for the Undertaking. If design requires activities outside the surveyed APE, AFNWC/NX will consult on the change in the Monitoring WP per Stipulation X.

3. AFNWC/NX shall provide cultural awareness training in accordance with Stipulation XVIII.B to all DAF personnel, contractors, and subcontractor personnel who access the Agreement's APE.

4. AFNWC/NX shall include within all relevant contract and subcontract documents issued for the Undertaking cultural awareness training requirements, and the procedures and requirements designed to protect historic properties within the Agreement's APE.

5. AFNWC/NX shall ensure a construction and environmental monitor (who is not an archaeologist or TCS) is present and conducting oversight of construction activities to ensure all protective procedures to be enacted during construction, as stipulated in this Agreement, are carried out. Monitors will have the authority to temporarily halt construction in the event of a post-review discovery (see Stipulation XVI and Appendix H).

B. Fencing and Monitoring. AFNWC/NX shall implement the following measures to ensure avoidance of physical effects from the Undertaking to National Register-eligible or undetermined archaeological sites or sites of Tribal significance located near ground-disturbing activities.

1. General Guidelines.

a) Installation of the fencing will be monitored by an archaeologist and/or a TCS as applicable.

b) Fencing will be kept in good repair for the duration of the construction or reclamation activity in the vicinity of the property.

c) Construction or environmental monitors (not archaeologists or TCSs) will ensure workers respect the exclusion area. Daily safety meetings (also known as tailgate meetings) will reinforce the importance of staying outside these areas.

d) Periodic monitoring of these exclusion areas will be conducted by archaeologists and TCSs while they are fenced. These periodic monitoring reports will be incorporated into the CR-COP.

e) Fencing will be removed after ground-disturbing activity has been completed in that area.

f) Removal of fencing will be monitored by an archaeologist and/or a TCS, as applicable.

g) All fencing and exclusion zones will be included in the CR-COP.

2. Fencing and Monitoring for Avoidance.

a) If ground-disturbing activities will occur between 50 to 100 feet of a historic property or a significant cultural resource, a temporary construction fence will be erected around the site to establish an exclusion area that incorporates a 50-foot buffer

between the boundary of the property and the fence. Periodic monitoring of these exclusion areas will be conducted by archaeologists and TCSs while they are fenced.

b) Fencing and monitoring of ground disturbing activity outside site boundary but within 50 feet of a historic property.

i. If ground-disturbing activities will occur outside of the site boundary but within 50 feet of a historic property or a significant cultural resource, a temporary construction fence will be erected around the site to establish an exclusion area that incorporates as large a buffer area as practicable between the boundary of the property and the fence.

ii. Ground-disturbing activities within 50 feet of the historic property boundary will be monitored by an archaeologist and a TCS. Monitors will have the authority to temporarily halt construction to record sites within construction easements.

3. Fencing and monitoring for ground disturbing activity within a historic property.

a) If ground-disturbing activities will occur within a historic property, a temporary construction fence may be erected around those portions of the site that can be avoided to establish exclusion areas.

i. The fencing will be placed to allow the work activity to be conducted within the portion of the site not included in the exclusion area.

ii. All ground-disturbing activities within the historic property boundary will be monitored by an archaeologist and a TCS. Monitors will have the authority to temporarily halt construction to record sites within construction easements.

iii. Periodic monitoring of the exclusion areas will be conducted while they are fenced.

iv. Fencing will be removed after the construction or reclamation activity has been completed in that area.

b) Surface artifacts within the unfenced portion of the site will be removed from the work area prior to ground disturbing activities occurring there and analyzed and recorded by an archaeologist and TCS. Disposition of the artifacts will be conducted in accordance with Stipulation XIX.

c) Construction or reclamation activities within the unfenced portion of the site and within 50 feet of the historic property boundary will be monitored by an archaeologist and a TCS, and artifacts and other cultural deposits exposed by the activities analyzed and recorded. Disposition of the artifacts will be conducted in accordance with Stipulation XIX.

XV. MITIGATION TO RESOLVE ADVERSE EFFECTS

A. Mitigation to Resolve Adverse Effects to the Missile Field Historic Districts. If conversion of the Minuteman III weapon system to support the Sentinel weapon system is selected in the ROD for the EIS, AFNWC/NX shall implement the following mitigation measures to resolve the adverse effects of the Undertaking to the contributing resources of the F.E. Warren Air

Force Base Missile Field Historic District, the Malmstrom Air Force Base Missile Field Historic District, and the Minot Air Force Base Missile Field Historic District:

1. AFNWC/NX shall coordinate with the AFGSC History Office and the National Museum of the United States Air Force to identify and retain Minuteman III weapon system equipment and architectural elements at the properties listed in Appendix C for loan or donation to museums or other institutions that interpret and educate the public about the Minuteman III weapon system or other ICBM systems. This shall be completed for each of the three (3) missile fields within five (5) years of the initiation of construction within each of the individual missile field.

2. AFNWC/NX and the AFGSC History Office shall compile and preserve a detailed photographic record of the missile fields at all classification levels, including comprehensive digital photography at one (1) representative MAF in each wing, photos of all unique art at all 45 MAFs, and sample photos of overt and covert graffiti, and ephemera, at all 45 MAFs. These priorities may be supplemented by other recording initiatives including comparable photography within a representative LF, aerial photography of the 45 MAFs, full motion video in one (1) or more representative LFs, and/or 360-degree photography within one (1) or more MAFs and a representative LF. These collections will be digitally archived at the Bohn Global Strike Research Facility at HQ AFGSC, and in the Air Force's historical archive at the Air Force Historical Research Agency, Maxwell AFB, Alabama, and will be available for release through normal security and policy reviews. The AFGSC History Office shall support the production of a published book, either internally or through a partnership with a private author or association such as the Association of Air Force Missileers. Compilation and preservation of the photographic record will occur throughout the entire duration of the Undertaking. The AFGSC History Office shall internally or through aforementioned partnership, publish the book within 15 years of the signing of this Agreement. AFNWC/NX will provide up to two (2) copies of the published book to all Signatories, Concurring Parties, and Tribes upon request.

3. AFNWC/NX shall complete Historic American Buildings Survey, Historic American Engineering Record, or Historic American Landscape Survey (HABS/HAER/HALS) documentation of representative examples of one (1) LF and of one (1) of each of the two (2) different types of MAFs. Representative examples will be chosen based on the physical condition of the facility. If a configuration or design has already been documented, AFNWC/NX shall review the documentation to determine if it is sufficient or if an update to the HABS/HAER/HALS is necessary. AFNWC/NX shall consult with the appropriate SHPO or THPO and NPS Regional Office to determine the HABS/HAER/HALS level of documentation. Upon NPS acceptance, documentation shall be transmitted through NPS to the Library of Congress (LOC) for archiving and public access. HABS/HAER/HALS documentation will be considered complete upon transmittal to the LOC. AFNWC/NX shall submit all HABS/HAER/HALS recordation that are to occur within an individual missile field to LOC through NPS within five (5) years of the initiation of construction within the individual missile field.

4. AFNWC/NX shall produce LiDAR scans of representative examples of one (1) LF and of one (1) of each of the two (2) different types of MAFs, which will be housed on the website described in Stipulation XV.A.8. AFNWC/NX shall complete all LiDAR scans

that are to occur within an individual missile field five (5) years from the initiation of construction within the individual missile field.

5. AFNWC/NX shall collect public history material (e.g., oral histories, photographs, videos, recordings, etc.) of Native American contributions to and involvement in the DAF's ICBM programs. This effort will be initiated with a research plan developed in accordance with Stipulation V. Output of the effort will be defined in the research plan and will include a digital interpretative product housed on the website described in Stipulation XV.A.8. AFNWC/NX shall complete Stipulation XV.A.5. within ten (10) years of the signing of this Agreement.

6. AFNWC/NX shall develop a brochure on Minuteman III weapon system. The brochure will have a link to the website described in Stipulation XV.A.8. AFNWC/NX shall make the brochure available electronically on the same website and print 500 copies of the brochure, which will be distributed to local appropriate visitors' centers, museums, and other institutions. AFNWC/NX shall complete Stipulation XV.A.6. within five (5) years of the signing of this Agreement.

7. AFNWC/NX shall develop an electronic pamphlet on Minuteman III weapon system. AFNWC/NX will make the pamphlet available on the website described in Stipulation XV.A.8. and formatted for easy printing by visitors to the website. The pamphlet will also include a link to the website. AFNWC/NX shall complete Stipulation XV.A.7. within five (5) years of the signing of this Agreement.

8. AFNWC/NX shall develop a public-facing website hosted by the DAF within three (3) years of the signing of this Agreement. The website will be maintained throughout the term the Agreement is in effect; at the termination of the Agreement a determination will be made on the best means to continue to make the data accessible to the public. The website will display information on the ESRI ArcGIS StoryMap platform and will focus on Minuteman III weapon system historical information and will include, but not limited to, the following:

    a) A brief description of the history of Minuteman III weapon system, development, and context within American history and the Cold War.

    b) Existing Minuteman III weapon system research, recordation, and interpretation materials.

    c) Links to existing Minuteman III weapon system HABS/HAER/HALS documentation maintained at the LOC.

    d) Links to HABS/HAER/HALS documentation developed in accordance with Stipulations XIII.C. and XIII.A. once uploaded to the LOC's website.

    e) LiDAR scans of a MAF and a LF developed in accordance with Stipulation XV.A.4.

    f) The public history of Native American contributions to and involvement in the DAF's ICBM programs developed in accordance with Stipulation XV.A.5.

    g) The brochure developed in accordance with Stipulation XV.A.6.

    h) The pamphlet developed in accordance with Stipulation XV.A.7.

9. AFNWC/NX shall not conduct any additional facility-specific mitigation to resolve adverse effects to historic properties that derive their significance solely from their association with the Minuteman III weapon system beyond HABS/HAER/HALS recordation (Stipulation XV.A.3) and the Minuteman III weapon system mitigation (Stipulation XV.A).

B. Mitigation to Resolve Adverse Effects to Building 486 Launch Facility Trainer U-02, at F.E. Warren AFB. If conversion of Building 486 support the Sentinel weapon system is selected in the ROD for the EIS, AFGSC and AFNWC/NX shall implement the following mitigation measures, which will supersede and replace the commitment to preserve the Building 486 for public visitation and interpretation and will resolve the adverse effects from the Undertaking to Building 486:

   1. AFNWC/NX shall update the existing HAER recording (HAER No. WY-90). AFNWC/NX shall submit the updated HAER to NPS for submission to the LOC within five (5) years of the signing of this Agreement.

   2. AFNWC/NX shall support the Wyoming State Parks and Historic Sites in developing interpretive exhibits at the Quebec-01 Missile Alert Facility Historic Site that address the Peacekeeper weapon system. This support shall consist of providing select equipment from Building 486 and background information. AFNWC/NX shall complete this within five (5) years of the signing of this Agreement.

   3. AFNWC/NX, in coordination with the relevant parties, to include F.E. Warren AFB, the Wyoming SHPO, and NPS, will produce and submit an updated National Historic Landmark (NHL) nomination for the Fort D.A. Russell NHL and an updated National Register nomination for the F.E. Warren Historic District. Once updated in consultation and officially approved, the NHL nomination and the National Register District nomination will replace the existing documentation. AFNWC/NX will submit initial drafts of each updated nomination through F.E. Warren AFB within two (2) years of the signing of this Agreement.

C. Compensatory Mitigation to Resolve the Adverse Effects of the Undertaking. If the DAF selects the Proposed Action or other Action Alternative through the issuance of a ROD for the EIS, AFNWC/NX shall implement the following compensatory mitigation measures to resolve the adverse effects of the Undertaking, which compensates for an effect by replacement or providing substitute resources, to offset the effects to historic properties from the Undertaking. Compensatory mitigation generally provides a public benefit and should be appropriate to the scale and scope of the effect being mitigated.

   1. AFNWC/NX shall conduct a combined ethnobotany and toponomy study or studies with coverage in each of the three (3) missile fields. AFNWC/NX shall afford Tribes the opportunity to consult and collaborate on the development of these studies. This effort will be initiated with a research plan developed in accordance with Stipulation V, and output of the effort will be defined in the research plan. AFNWC/NX shall complete this within ten (10) years of the signing of this Agreement.

   2. AFNWC/NX shall consult with Tribes, land managing agencies, and/or landowner as appropriate on seed mixes recommended for use in project area reclamation activities. This stipulation shall be completed for Malmstrom and Minot missile fields one (1) year prior to the initiation of construction within the individual missile field. For the F.E.

Warren missile fields, the consultation will be completed no later than one (1) year after the initiation of construction within the missile field.

3. AFNWC/NX shall provide the results of Project-related biological surveys conducted in the APEs to Tribes. Within ten (10) business days of a survey having been finalized and deemed releasable, AFNWC/NX shall make the survey available in CR-COP.

4. AFNWC/NX shall prepare a synthetic report of the results of cultural resource identification work conducted to meet the requirements of this Agreement for each of the three (3) missile fields. This shall be completed for each of the three (3) missile fields within two (2) years after the completion of construction within the individual missile field. Further details on the Synthetic Report are contained in Stipulation XIII.

D. When adverse effects cannot be sufficiently avoided and minimized by the approaches described in Stipulation XIV, AFNWC/NX shall resolve adverse effects by developing and implementing a plan to mitigate the adverse effect as appropriate. Data Recovery Work Plans will be developed in accordance with Stipulation VIII and be based on the effect of the Undertaking on historic properties on a case-by-case basis.

1. When AFNWC/NX proposes to address adverse effects to buildings and structures that are eligible for listing in the National Register and are of national significance, AFNWC/NX shall prepare HABS/HAER/HALS documentation.

   a) If HABS/HAER/HALS documentation has already been drafted for the building or structure or a similar building or structure, AFNWC/NX shall review the documentation to determine if it is sufficient or if an update to the draft HABS/HAER/HALS is necessary. All HABS/HAER/HALS projects will be coordinated with the appropriate NPS Regional office and the appropriate SHPO or THPO to ensure that standards and guidelines are met. Upon NPS acceptance, documentation shall be transmitted through NPS to the LOC for archiving and public access. HABS/HAER/HALS documentation will be considered complete upon transmittal to the LOC. AFNWC/NX shall submit the HABS/HAER/HALS recordation to LOC through NPS within three (3) years from initiation of consultation regarding the individual action.

   b) If the building or structure to be adversely affected is of a classified nature, AFNWC/NX shall document existing conditions with quality color and black and white digital photographs and compile existing as-built drawings. AFNWC/NX shall retain the documentation and release it if and when the facility is declassified and the documentation is approved for public release.

   c) If any buildings or structures that are contributing to the Fort D.A. Russell NHL, located at F.E. Warren AFB, are selected for renovation or modification, AFNWC/NX will consult with Wyoming SHPO and NPS, Interior Regions 6, 7, and 8 on building-specific treatment plans to address effects to buildings or structures.

2. When AFNWC/NX proposes to address adverse effects to archaeology sites through data recovery excavations, it will use the following criteria for determining if data recovery is the appropriate mitigation measure for sites that have been determined as eligible for listing in the National Register:

- Pre-contact archaeological sites must retain integrity; have yielded or have the potential to yield information to address data gaps in the archaeological record; and have the potential to provide chronometric data (e.g., radiocarbon dates).
- Contact and post-contact archaeological sites must retain integrity and have yielded or have the potential to yield information to address gaps in the archaeological record.

a) AFNWC/NX shall ensure that a minimum of one (1) cubic meter is excavated for small sites (less than 25 square meters), two (2) cubic meters are excavated for medium sites (greater than 25 square meters and less than 75 square meters), and three (3) cubic meters are excavated for large sites (greater than 75 square meters). Additional volume of excavation will be determined on a site-by-site basis and be consulted on through the review of the Data Recovery Work Plan.

b) AFNWC/NX shall implement an archaeological feature-focused approach to excavation. Features include, but are not limited to, high-density artifact concentrations, intact hearths, and privies.

c) AFNWC/NX shall only conduct data recovery efforts on portions of sites that will be directly and physically affected by ground disturbing activities.

d) AFNWC/NX shall utilize the WSP (defined in Stipulation V and Appendix F) in preparing Data Recovery WP. WSPs include research designs and identify regional data gaps in the archaeology record. The Data Recovery WP is detailed in Stipulation VIII.

e) AFNWC/NX shall request TCSs from Tribes and make a reasonable and good faith effort for them to participate in archaeological data recovery efforts.

f) AFNWC/NX shall prepare a Data Recovery MS documenting the completion of fieldwork. The preliminary report will demonstrate the completion and sufficiency of excavation as described in the data recovery plan. The Data Recovery MS is detailed in Stipulation IX.

g) Artifacts collected during data recovery will be curated in accordance with Stipulation XIX.

3. If there are historic properties that will be adversely affected and HABS/HAER/HALS or data recovery is not the only treatment to resolve adverse effects or is not the appropriate treatment measure, AFNWC/NX shall conduct alternate treatment measures to resolve the adverse effect. AFNWC/NX shall develop a treatment plan describing the treatment to be implemented. The plan will be developed and consulted on using the same processes as other Work Plans (Stipulations VI, VIII, and X). Timelines, to include deadlines, for completion of alternative treatment measures will be developed in consultation with the appropriate Signatories, Concurring Parties, and Tribes.

XVI. POST-REVIEW DISCOVERIES

If properties are discovered that may be historically significant or are significant to a Tribe or if unanticipated effects to historic properties are found, AFNWC/NX shall implement the Post-Review Discovery Plan included as Appendix H of this Agreement.

XVII. EMERGENCIES AND OTHER SPECIAL SITUATIONS

A. If AFNWC/NX determines that an immediate response is essential to respond to a disaster or an emergency is declared by the President, a Tribal government, or the governor of a state, in order to protect threats to life or property, AFNWC/NX shall follow the notification and comment process described in 36 C.F.R. 800.12(b)(2). Immediate response, rescue, and salvage operations conducted to preserve life or property will be exempt from the provisions of this Agreement. Every effort will be made to avoid adversely affecting historic properties.

1. The above actions will apply only to actions that will be implemented within thirty (30) calendar days after the disaster or emergency has been formally declared by the appropriate authority. AFNWC/NX may request an extension of the period of applicability from the SHPO or THPO prior to the expiration of the thirty (30) calendar days. A complete report on any emergency situations, any affected historic properties, and any data recovery carried out will be prepared by AFNWC/NX in accordance with Stipulation XII.

2. If AFNWC/NX delegates authority for managing an emergency situation to another entity, AFNWC/NX retains responsibility for compliance with this Agreement on lands included in the Undertaking.

B. For operations to respond to special situations such as wildland fire, flooding, or hazardous materials incidents, AFNWC/NX shall meet its obligations in the following manner:

1. To the extent that such actions do not compromise personnel safety, public safety, or immediately threaten property, AFNWC/NX shall evaluate effects on known historic properties and newly discovered cultural resources for National Register eligibility prior to continuing operations. AFNWC/NX shall make reasonable efforts to avoid, minimize, or mitigate adverse effects of such operations to any historic properties discovered. Such evaluations should occur within 48 hours of discovery, but if that cannot be accomplished, all sites or structures will be treated as eligible. For eligible properties, the preferred course of action will be to identify and implement tactics so that adverse effects to historic properties are avoided. If adverse effects cannot be avoided, AFNWC/NX shall ensure that a Work Plan is prepared in accordance with Stipulation VI and VIII and executed so long as these actions will not compromise personnel safety, public safety, or threaten property.

XVIII. TRAINING

A. TCS Training Program. AFNWC/NX recognizes that Tribes are the certifying entity to determine if an individual is qualified to be a TCS. In addition to existing programs facilitated by Tribes, AFNWC/NX shall develop a training program for TCSs for those wishing to participate in archaeological investigations such as survey, site recording, monitoring, etc. for the Undertaking.

1. AFNWC/NX shall consult with Tribes on the scope of work for planning, developing, and implementing the training program.

2. AFNWC/NX shall consult with Tribes on the content of the training program as it is developed.

3. The training will be offered as needed, at a minimum annually.

4. The training will continue until ground-disturbing activities included in the Undertaking are complete.

B. Cultural Awareness Training. AFNWC/NX shall develop cultural awareness training that will be provided to all Air Force personnel and Air Force contractor and subcontractor personnel who access the APEs.

1. The training will address at a minimum historic preservation, Indigenous intellectual property, cultural sensitivity, confidentiality, and avoidance procedures. The training will include two (2) parts:

a) A video included with the training package required for workers when they are first hired and thereafter annually. AFNWC/NX will afford Tribes the opportunity to include Tribal representatives in the video.

b) Daily safety briefings will include general talking points, presence of known sensitive areas that will be encountered that day, and avoidance measures. Information provided will be restricted to what is needed to avoid a sensitive area(s). No additional information will be disclosed. If TCSs are present, they will be afforded the opportunity to contribute to the briefing.

2. AFNWC/NX shall develop the scope of the video, the script for the video, and the content for the annual briefing in consultation with Tribes.

XIX. COLLECTION, CUSTODY, DISPOSITION, AND CURATION OF RECOVERED MATERIALS AND RECORDS

A. AFNWC/NX shall conduct collection of artifacts and cultural material during work conducted in the APEs for the Undertaking or in furtherance of the stipulations in this Agreement in accordance with the following:

1. On lands owned by DAF, collection will follow the requirements of the associated installation's Integrated Cultural Resource Management Plan, Air Force Implementing Guidance, and DoD policy.

2. On lands owned by the Federal Government and administered by a non-Air Force Federal agency, collection will follow that land managing agency's standards and policy requirements.

3. On lands within the exterior boundary of the MHA Nation at the Fort Berthold Indian Reservation, collection will follow MHA Nation's Tribal codes and resolutions to include handling and collecting of paleontological resources.

4. On lands owned by a state and administered by a state agency, collection will follow that state agency's standards and policy requirements.

5. On privately owned lands, all artifacts and cultural materials will be left onsite or buried within the disturbed soil where discovered, unless the landowner will not allow this. If it is not allowed, AFNWC/NX shall coordinate with the landowner on disposition in accordance with applicable state law after completion of in-field analysis and documentation.

B. AFNWC/NX shall curate artifacts and cultural material collected on federal land, records, and data according to 36 C.F.R. Part 79, *Curation of Federally-Owned and Administered Archeological Collections*.

C. Human remains, objects, and items discovered on federal land meeting NAGPRA definitions will be treated according to the requirements and procedures in the NAGPRA regulations or associated agreements entered into between the federal land managing agency and Tribal governments.

D. Human remains, items, and objects found on non-federal land will be handled according to the relevant state statute and rules.

XX. AGREEMENT MONITORING AND REPORTING

A. Annual Meeting

1. AFNWC/NX shall host an annual meeting of the Signatories, Concurring Parties, and Tribes each year to discuss activities carried out pursuant to this Agreement during the preceding year, activities scheduled for the upcoming year, and the effectiveness of the Agreement and its stipulations. The meeting will occur no later than the end of February.

2. The annual meeting will also include a separate training about the Agreement, including such topics as what the Agreement is, how it was developed, how it functions, and how parties can participate in its implementation.

3. AFNWC/NX shall be responsible for preparing the official record of the meeting and distributing the meeting minutes to Signatories, Concurring Parties, and Tribes, regardless of participation in the meeting, within one (1) month of the meeting.

4. AFNWC/NX shall develop the meeting format and arrangements. Remote participation via computer or telephone will be included.

B. Annual Reporting

1. AFNWC/NX shall prepare an Annual Report documenting compliance with the stipulations of this Agreement. The report will be distributed electronically to the Signatories, Concurring Parties, and Tribes ten (10) business days prior to the annual meeting (Stipulation XX.A).

2. AFNWC/NX shall include in the annual report the following information:

a) List of individual activities that fell under the Agreement; involvement of Signatories, Concurring Parties, and Tribes; the final eligibility determinations and assessments of effect; and status of completed plans, management summaries, and reports.

b) Resolutions of adverse effects.

c) Post-review discoveries.

d) Disputes and how they were resolved.

e) Recommendations to improve the effectiveness of the Agreement.

XXI. ANTI-DEFICIENCY ACT COMPLIANCE

AFNWC/NX's obligations under this Agreement are subject to the availability of appropriated funds, and the stipulations of this Agreement are subject to the provisions of the Anti-Deficiency Act (31 U.S.C. § 1341). Nothing in this Agreement shall be interpreted to require any obligation or payment of funds in violation of the Anti-Deficiency Act (31 U.S.C. § 1341). AFNWC/NX shall make reasonable and good faith efforts to secure the necessary funds to implement this Agreement. If compliance with the Anti-Deficiency Act alters or impairs AFNWC/NX's ability to implement the stipulations of this Agreement, AFNWC/NX shall consult with the Signatories in accordance with the amendment and termination procedures found in Stipulations XXVII and XXVIII, as appropriate.

XXII. ENTIRETY OF AGREEMENT

The original PA, consisting of thirty-nine (39) pages and Appendix A through Appendix H, consisting of one hundred seventy-three (173) pages, represents the entire and integrated agreement between the Parties and supersedes all prior negotiations, representations, and agreements, whether written or oral, regarding compliance with Section 106 of the NHPA.

XXIII. SEVERABILITY

Should any portion of this Agreement be judicially determined to be illegal or unenforceable, the remainder of the Agreement shall continue in full force and effect, and any party may renegotiate the terms affected by the severance.

XXIV. SOVEREIGN IMMUNITY

The Federal Government, the various Tribal nations, states and their respective THPOs/SHPOs and other state agencies do not waive their sovereign or governmental immunity by entering into this Agreement and each fully retains all immunities and defenses provided by law with respect to any action based on or occurring as a result of this Agreement.

XXV. INDEMNIFICATION

Each Signatory and Concurring Party to this Amendment shall assume the risk of any liability arising from its own conduct. Each Signatory and Concurring Party agrees they are not obligated to insure, defend, or indemnify the other Signatories to this Agreement.

XXVI. DISPUTE RESOLUTION

Should any Signatories or Concurring Parties to this Agreement object at any time to actions proposed or the manner in which the terms of this Agreement are being implemented, AFNWC/NX shall consult with such party to attempt to resolve the objection. If AFNWC/NX determines that such objection cannot be resolved, AFNWC/NX shall:

A. Forward all documentation relevant to the dispute, including AFNWC/NX's proposed resolution, to ACHP. ACHP shall provide AFNWC/NX with its advice on the resolution of the objection within thirty (30) calendar days of receiving adequate documentation. Prior to reaching a final decision on the dispute, AFNWC/NX shall prepare a written response that takes into account any timely advice or comments regarding the dispute from ACHP,

Signatories, and Concurring Parties, and provide them with a copy of this written response. AFNWC/NX shall then proceed according to its final decision.

B. If ACHP does not provide its advice regarding the dispute within the thirty (30) calendar days' time period, AFNWC/NX may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, AFNWC/NX shall prepare a written response that takes into account any timely comments regarding the dispute from the Signatories, Concurring Parties, and Tribes of the Agreement and provide them and ACHP with a copy of such written response.

C. AFNWC/NX's responsibility to carry out all other actions subject to the terms of this Agreement that are not the subject of the dispute will remain unchanged.

XXVII. AMENDMENTS

This Agreement may be amended when such an amendment is agreed to in writing by all Signatories.

During the amendment process, the Undertaking will proceed, and the existing Agreement will remain in force. The amendment will be effective on the date a copy signed by all Signatories is filed with ACHP.

XXVIII. TERMINATION

If any Signatory to this Agreement determines that its terms will not or cannot be carried out, that Signatory shall immediately consult with the other Signatories to attempt to develop an amendment per Stipulation XXVII. If within sixty (60) calendar days (or another time period agreed to by all Signatories) an amendment cannot be reached, any Signatory may terminate the Agreement upon written notification to the other Signatories.

Once the Agreement is terminated, and prior to work continuing on the Undertaking, AFNWC/NX shall either (a) execute a new Agreement pursuant to 36 C.F.R. § 800.14; or (b) request, take into account, and respond to the comments of ACHP under 36 C.F.R. § 800.7. AFNWC/NX shall notify the Signatories as to the course of action it will pursue.

XXIX. DURATION

A. This Agreement shall remain in effect for twenty (20) years after the date of execution, which is the date of signature by ACHP. Prior to such time, AFNWC/NX may consult with the other Signatories to reconsider the terms and duration of this Agreement and amend it in accordance with Stipulation XVII.

B. If AFNWC/NX determines the terms of the Agreement have been fulfilled, it shall notify other Signatories in writing. Upon written concurrence from Signatories that the terms of the Agreement have been fulfilled, this Agreement will be considered expired.

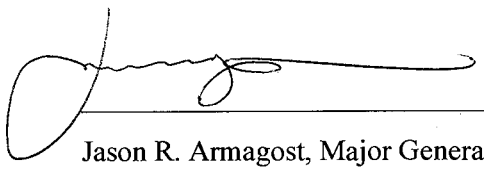
C. All mitigation measures shall be completed prior to the expiration of this Agreement.

EXECUTION of this Agreement by AFGSC; AFMC; MHA Nation; the Arizona SHPO; the Colorado SHPO; the Montana SHPO; the Nebraska SHPO; the North Dakota SHPO; the Utah SHPO; the Wyoming SHPO; NPS, Interior Regions 6, 7, and 8; and ACHP and implementation of its terms evidence that AFNWC/NX has taken into account the effects of the Undertaking on historic properties and afforded ACHP an opportunity to comment.

This Agreement may be executed in counterparts, each of which shall constitute an original, and all of which shall constitute one and the same agreement.

PROGRAMMATIC AGREEMENT
AMONG
AIR FORCE GLOBAL STRIKE COMMAND;
AIR FORCE MATERIEL COMMAND;
THREE AFFILIATED TRIBES OF THE MANDAN, HIDATSA, AND ARIKARA NATION;
ARIZONA STATE HISTORIC PRESERVATION OFFICER;
COLORADO STATE HISTORIC PRESERVATION OFFICER;
MONTANA STATE HISTORIC PRESERVATION OFFICER;
NEBRASKA STATE HISTORIC PRESERVATION OFFICER;
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER;
UTAH STATE HISTORIC PRESERVATION OFFICER;
WYOMING STATE HISTORIC PRESERVATION OFFICER;
NATIONAL PARK SERVICE, INTERIOR REGIONS 6, 7, AND 8;
AND ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
DEPLOYMENT OF THE SENTINEL WEAPON SYSTEM AND DECOMMISSIONING AND DISPOSAL OF THE MINUTEMAN III WEAPON SYSTEM IN ARIZONA, COLORADO, MONTANA, NEBRASKA, NORTH DAKOTA, UTAH, AND WYOMING

AIR FORCE GLOBAL STRIKE COMMAND (*Signatory*)



Date: 14 DEC 2022

Jason R. Armagost, Major General, USAF
Director, Strategic Plans, Programs and Requirements

PROGRAMMATIC AGREEMENT
AMONG
AIR FORCE GLOBAL STRIKE COMMAND;
AIR FORCE MATERIEL COMMAND;
THREE AFFILIATED TRIBES OF THE MANDAN, HIDATSA, AND ARIKARA NATION;
ARIZONA STATE HISTORIC PRESERVATION OFFICER;
COLORADO STATE HISTORIC PRESERVATION OFFICER;
MONTANA STATE HISTORIC PRESERVATION OFFICER;
NEBRASKA STATE HISTORIC PRESERVATION OFFICER;
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER;
UTAH STATE HISTORIC PRESERVATION OFFICER;
WYOMING STATE HISTORIC PRESERVATION OFFICER;
NATIONAL PARK SERVICE, INTERIOR REGIONS 6, 7, AND 8;
AND ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
DEPLOYMENT OF THE SENTINEL WEAPON SYSTEM AND DECOMMISSIONING AND DISPOSAL OF THE MINUTEMAN III WEAPON SYSTEM IN ARIZONA, COLORADO, MONTANA, NEBRASKA, NORTH DAKOTA, UTAH, AND WYOMING

AIR FORCE MATERIEL COMMAND (*Signatory*)

VONHOFFMAN.CONSTANCE.M.1115232955 Digitally signed by VONHOFFMAN.CONSTANCE.M.1115232955 Date: 2022.12.13 13:41:31 -05'00' Date: 13-Dec-22

C. McCauley von Hoffman, Maj Gen, USAF
Director of Logistics, Civil Engineering, Force Protection and Nuclear Integration

PROGRAMMATIC AGREEMENT
AMONG
AIR FORCE GLOBAL STRIKE COMMAND;
AIR FORCE MATERIEL COMMAND;
THREE AFFILIATED TRIBES OF THE MANDAN, HIDATSA, AND ARIKARA NATION;
ARIZONA STATE HISTORIC PRESERVATION OFFICER;
COLORADO STATE HISTORIC PRESERVATION OFFICER;
MONTANA STATE HISTORIC PRESERVATION OFFICER;
NEBRASKA STATE HISTORIC PRESERVATION OFFICER;
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER;
UTAH STATE HISTORIC PRESERVATION OFFICER;
WYOMING STATE HISTORIC PRESERVATION OFFICER;
NATIONAL PARK SERVICE, INTERIOR REGIONS 6, 7, AND 8;
AND ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
DEPLOYMENT OF THE SENTINEL WEAPON SYSTEM AND DECOMMISSIONING AND DISPOSAL OF THE MINUTEMAN III WEAPON SYSTEM IN ARIZONA, COLORADO, MONTANA, NEBRASKA, NORTH DAKOTA, UTAH, AND WYOMING

THREE AFFILIATED TRIBES OF THE MANDAN, HIDATSA, AND ARIKARA NATION
(*Signatory*)

Mark A Fox Date: 12/16/22

Mark Fox, Chairman

PROGRAMMATIC AGREEMENT
AMONG
AIR FORCE GLOBAL STRIKE COMMAND;
AIR FORCE MATERIEL COMMAND;
THREE AFFILIATED TRIBES OF THE MANDAN, HIDATSA, AND ARIKARA NATION;
ARIZONA STATE HISTORIC PRESERVATION OFFICER;
COLORADO STATE HISTORIC PRESERVATION OFFICER;
MONTANA STATE HISTORIC PRESERVATION OFFICER;
NEBRASKA STATE HISTORIC PRESERVATION OFFICER;
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER;
UTAH STATE HISTORIC PRESERVATION OFFICER;
WYOMING STATE HISTORIC PRESERVATION OFFICER;
NATIONAL PARK SERVICE, INTERIOR REGIONS 6, 7, AND 8;
AND ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
DEPLOYMENT OF THE SENTINEL WEAPON SYSTEM AND DECOMMISSIONING AND DISPOSAL OF THE MINUTEMAN III WEAPON SYSTEM IN ARIZONA, COLORADO, MONTANA, NEBRASKA, NORTH DAKOTA, UTAH, AND WYOMING

ARIZONA STATE HISTORIC PRESERVATION OFFICER (*Signatory*)

Date: 16 Dec 2022

Kathryn Leonard
State Historic Preservation Office, Arizona State Parks and Trails

PROGRAMMATIC AGREEMENT
AMONG
AIR FORCE GLOBAL STRIKE COMMAND;
AIR FORCE MATERIEL COMMAND;
THREE AFFILIATED TRIBES OF THE MANDAN, HIDATSA, AND ARIKARA NATION;
ARIZONA STATE HISTORIC PRESERVATION OFFICER;
COLORADO STATE HISTORIC PRESERVATION OFFICER;
MONTANA STATE HISTORIC PRESERVATION OFFICER;
NEBRASKA STATE HISTORIC PRESERVATION OFFICER;
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER;
UTAH STATE HISTORIC PRESERVATION OFFICER;
WYOMING STATE HISTORIC PRESERVATION OFFICER;
NATIONAL PARK SERVICE, INTERIOR REGIONS 6, 7, AND 8;
AND ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
DEPLOYMENT OF THE SENTINEL WEAPON SYSTEM AND DECOMMISSIONING AND DISPOSAL OF THE MINUTEMAN III WEAPON SYSTEM IN ARIZONA, COLORADO, MONTANA, NEBRASKA, NORTH DAKOTA, UTAH, AND WYOMING

COLORADO STATE HISTORIC PRESERVATION OFFICER (*Signatory*)

Patrick A. Eidman, Deputy SHPO for SHPO DiPrince Date: 12/16/2022

Dawn DiPrince
State Historic Preservation Office, History Colorado

PROGRAMMATIC AGREEMENT
AMONG
AIR FORCE GLOBAL STRIKE COMMAND;
AIR FORCE MATERIEL COMMAND;
THREE AFFILIATED TRIBES OF THE MANDAN, HIDATSA, AND ARIKARA NATION;
ARIZONA STATE HISTORIC PRESERVATION OFFICER;
COLORADO STATE HISTORIC PRESERVATION OFFICER;
MONTANA STATE HISTORIC PRESERVATION OFFICER;
NEBRASKA STATE HISTORIC PRESERVATION OFFICER;
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER;
UTAH STATE HISTORIC PRESERVATION OFFICER;
WYOMING STATE HISTORIC PRESERVATION OFFICER;
NATIONAL PARK SERVICE, INTERIOR REGIONS 6, 7, AND 8;
AND ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
DEPLOYMENT OF THE SENTINEL WEAPON SYSTEM AND DECOMMISSIONING AND DISPOSAL OF THE MINUTEMAN III WEAPON SYSTEM IN ARIZONA, COLORADO, MONTANA, NEBRASKA, NORTH DAKOTA, UTAH, AND WYOMING

MONTANA STATE HISTORIC PRESERVATION OFFICER (*Signatory*)

Peter Brown Date: 7 December 2022

Peter Brown
State Historic Preservation Office, Montana Historical Society

PROGRAMMATIC AGREEMENT
AMONG
AIR FORCE GLOBAL STRIKE COMMAND;
AIR FORCE MATERIEL COMMAND;
THREE AFFILIATED TRIBES OF THE MANDAN, HIDATSA, AND ARIKARA NATION;
ARIZONA STATE HISTORIC PRESERVATION OFFICER;
COLORADO STATE HISTORIC PRESERVATION OFFICER;
MONTANA STATE HISTORIC PRESERVATION OFFICER;
NEBRASKA STATE HISTORIC PRESERVATION OFFICER;
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER;
UTAH STATE HISTORIC PRESERVATION OFFICER;
WYOMING STATE HISTORIC PRESERVATION OFFICER;
NATIONAL PARK SERVICE, INTERIOR REGIONS 6, 7, AND 8;
AND ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
DEPLOYMENT OF THE SENTINEL WEAPON SYSTEM AND DECOMMISSIONING AND DISPOSAL OF THE MINUTEMAN III WEAPON SYSTEM IN ARIZONA, COLORADO, MONTANA, NEBRASKA, NORTH DAKOTA, UTAH, AND WYOMING

NEBRASKA STATE HISTORIC PRESERVATION OFFICER (*Signatory*)

Jill Dolberg Date: 12/7/2022

Jill Dolberg
State Historic Preservation Office (Acting), History Nebraska

PROGRAMMATIC AGREEMENT
AMONG
AIR FORCE GLOBAL STRIKE COMMAND;
AIR FORCE MATERIEL COMMAND;
THREE AFFILIATED TRIBES OF THE MANDAN, HIDATSA, AND ARIKARA NATION;
ARIZONA STATE HISTORIC PRESERVATION OFFICER;
COLORADO STATE HISTORIC PRESERVATION OFFICER;
MONTANA STATE HISTORIC PRESERVATION OFFICER;
NEBRASKA STATE HISTORIC PRESERVATION OFFICER;
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER;
UTAH STATE HISTORIC PRESERVATION OFFICER;
WYOMING STATE HISTORIC PRESERVATION OFFICER;
NATIONAL PARK SERVICE, INTERIOR REGIONS 6, 7, AND 8;
AND ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
DEPLOYMENT OF THE SENTINEL WEAPON SYSTEM AND DECOMMISSIONING AND DISPOSAL OF THE MINUTEMAN III WEAPON SYSTEM IN ARIZONA, COLORADO, MONTANA, NEBRASKA, NORTH DAKOTA, UTAH, AND WYOMING

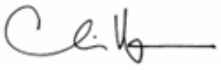
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER (*Signatory*)

William D Peterson Date: 12-16-2022

William D. Peterson, PhD
State Historic Preservation Office, State Historical Society of North Dakota

PROGRAMMATIC AGREEMENT
AMONG
AIR FORCE GLOBAL STRIKE COMMAND;
AIR FORCE MATERIEL COMMAND;
THREE AFFILIATED TRIBES OF THE MANDAN, HIDATSA, AND ARIKARA NATION;
ARIZONA STATE HISTORIC PRESERVATION OFFICER;
COLORADO STATE HISTORIC PRESERVATION OFFICER;
MONTANA STATE HISTORIC PRESERVATION OFFICER;
NEBRASKA STATE HISTORIC PRESERVATION OFFICER;
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER;
UTAH STATE HISTORIC PRESERVATION OFFICER;
WYOMING STATE HISTORIC PRESERVATION OFFICER;
NATIONAL PARK SERVICE, INTERIOR REGIONS 6, 7, AND 8;
AND ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
DEPLOYMENT OF THE SENTINEL WEAPON SYSTEM AND DECOMMISSIONING AND DISPOSAL OF THE MINUTEMAN III WEAPON SYSTEM IN ARIZONA, COLORADO, MONTANA, NEBRASKA, NORTH DAKOTA, UTAH, AND WYOMING

UTAH STATE HISTORIC PRESERVATION OFFICER (*Signatory*)



Chris Hansen, Deputy SHPO (for Chris Merritt) Date: 12/15/2022

Chris Merritt
State Historic Preservation Office, Utah Department of Cultural and Community Engagement

PROGRAMMATIC AGREEMENT
AMONG
AIR FORCE GLOBAL STRIKE COMMAND;
AIR FORCE MATERIEL COMMAND;
THREE AFFILIATED TRIBES OF THE MANDAN, HIDATSA, AND ARIKARA NATION;
ARIZONA STATE HISTORIC PRESERVATION OFFICER;
COLORADO STATE HISTORIC PRESERVATION OFFICER;
MONTANA STATE HISTORIC PRESERVATION OFFICER;
NEBRASKA STATE HISTORIC PRESERVATION OFFICER;
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER;
UTAH STATE HISTORIC PRESERVATION OFFICER;
WYOMING STATE HISTORIC PRESERVATION OFFICER;
NATIONAL PARK SERVICE, INTERIOR REGIONS 6, 7, AND 8;
AND ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
DEPLOYMENT OF THE SENTINEL WEAPON SYSTEM AND DECOMMISSIONING AND DISPOSAL OF THE MINUTEMAN III WEAPON SYSTEM IN ARIZONA, COLORADO, MONTANA, NEBRASKA, NORTH DAKOTA, UTAH, AND WYOMING

WYOMING STATE HISTORIC PRESERVATION OFFICER (*Signatory*)

_____ Date: 12/16/22

Sara Needles
State Historic Preservation Office, Wyoming State Parks and Cultural Resources

WYOMING ATTORNEY GENERAL'S OFFICE: APPROVAL AS TO FORM

_____ #227313 Date: Dec. 13, 2022

Megan Pope, Senior Assistant Attorney General

PROGRAMMATIC AGREEMENT
AMONG
AIR FORCE GLOBAL STRIKE COMMAND;
AIR FORCE MATERIEL COMMAND;
THREE AFFILIATED TRIBES OF THE MANDAN, HIDATSA, AND ARIKARA NATION;
ARIZONA STATE HISTORIC PRESERVATION OFFICER;
COLORADO STATE HISTORIC PRESERVATION OFFICER;
MONTANA STATE HISTORIC PRESERVATION OFFICER;
NEBRASKA STATE HISTORIC PRESERVATION OFFICER;
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER;
UTAH STATE HISTORIC PRESERVATION OFFICER;
WYOMING STATE HISTORIC PRESERVATION OFFICER;
NATIONAL PARK SERVICE, INTERIOR REGIONS 6, 7, AND 8;
AND ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
DEPLOYMENT OF THE SENTINEL WEAPON SYSTEM AND DECOMMISSIONING AND DISPOSAL OF THE MINUTEMAN III WEAPON SYSTEM IN ARIZONA, COLORADO, MONTANA, NEBRASKA, NORTH DAKOTA, UTAH, AND WYOMING

UNITED STATES NATIONAL PARK SERVICE, SERVING DEPARTMENT OF THE INTERIOR REGIONS 6, 7, AND 8 *(Invited Signatory)*

KATHARINE HAMMOND

Digitally signed by KATHARINE HAMMOND
Date: 2022.12.13 12:36:57 -07'00'

_____ Date:_____

Katharine (Kate) Hammond, Acting Regional Director, Interior Regions 6, 7, and 8

PROGRAMMATIC AGREEMENT
AMONG
AIR FORCE GLOBAL STRIKE COMMAND;
AIR FORCE MATERIEL COMMAND;
THREE AFFILIATED TRIBES OF THE MANDAN, HIDATSA, AND ARIKARA NATION;
ARIZONA STATE HISTORIC PRESERVATION OFFICER;
COLORADO STATE HISTORIC PRESERVATION OFFICER;
MONTANA STATE HISTORIC PRESERVATION OFFICER;
NEBRASKA STATE HISTORIC PRESERVATION OFFICER;
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER;
UTAH STATE HISTORIC PRESERVATION OFFICER;
WYOMING STATE HISTORIC PRESERVATION OFFICER;
NATIONAL PARK SERVICE, INTERIOR REGIONS 6, 7, AND 8;
AND ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
DEPLOYMENT OF THE SENTINEL WEAPON SYSTEM AND DECOMMISSIONING AND DISPOSAL OF THE MINUTEMAN III WEAPON SYSTEM IN ARIZONA, COLORADO, MONTANA, NEBRASKA, NORTH DAKOTA, UTAH, AND WYOMING

ADVISORY COUNCIL ON HISTORIC PRESERVATION (*Signatory*)

_____ Date: December 19, 2022

Reid Nelson, Executive Director, Acting

PROGRAMMATIC AGREEMENT
AMONG
AIR FORCE GLOBAL STRIKE COMMAND;
AIR FORCE MATERIEL COMMAND;
THREE AFFILIATED TRIBES OF THE MANDAN, HIDATSA, AND ARIKARA NATION;
ARIZONA STATE HISTORIC PRESERVATION OFFICER;
COLORADO STATE HISTORIC PRESERVATION OFFICER;
MONTANA STATE HISTORIC PRESERVATION OFFICER;
NEBRASKA STATE HISTORIC PRESERVATION OFFICER;
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER;
UTAH STATE HISTORIC PRESERVATION OFFICER;
WYOMING STATE HISTORIC PRESERVATION OFFICER;
NATIONAL PARK SERVICE, INTERIOR REGIONS 6, 7, AND 8;
AND ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
DEPLOYMENT OF THE SENTINEL WEAPON SYSTEM AND DECOMMISSIONING AND DISPOSAL OF THE MINUTEMAN III WEAPON SYSTEM IN ARIZONA, COLORADO, MONTANA, NEBRASKA, NORTH DAKOTA, UTAH, AND WYOMING

WARD COUNTY, NORTH DAKOTA (*CONCURRING PARTY*)

John Fjeldahl Date: Dec 16, 2022

John Fjeldahl
Chairman, Board of Ward County Commissioners

PROGRAMMATIC AGREEMENT
AMONG
AIR FORCE GLOBAL STRIKE COMMAND;
AIR FORCE MATERIEL COMMAND;
THREE AFFILIATED TRIBES OF THE MANDAN, HIDATSA, AND ARIKARA NATION;
ARIZONA STATE HISTORIC PRESERVATION OFFICER;
COLORADO STATE HISTORIC PRESERVATION OFFICER;
MONTANA STATE HISTORIC PRESERVATION OFFICER;
NEBRASKA STATE HISTORIC PRESERVATION OFFICER;
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER;
UTAH STATE HISTORIC PRESERVATION OFFICER;
WYOMING STATE HISTORIC PRESERVATION OFFICER;
NATIONAL PARK SERVICE, INTERIOR REGIONS 6, 7, AND 8;
AND ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
DEPLOYMENT OF THE SENTINEL WEAPON SYSTEM AND DECOMMISSIONING AND DISPOSAL OF THE MINUTEMAN III WEAPON SYSTEM IN ARIZONA, COLORADO, MONTANA, NEBRASKA, NORTH DAKOTA, UTAH, AND WYOMING

MONTANA AREA OFFICE, BUREAU OF RECLAMATION (*CONCURRING PARTY*)

Date: 12/12/22

Ryan Newman
Area Manager

PROGRAMMATIC AGREEMENT
AMONG
AIR FORCE GLOBAL STRIKE COMMAND;
AIR FORCE MATERIEL COMMAND;
THREE AFFILIATED TRIBES OF THE MANDAN, HIDATSA, AND ARIKARA NATION;
ARIZONA STATE HISTORIC PRESERVATION OFFICER;
COLORADO STATE HISTORIC PRESERVATION OFFICER;
MONTANA STATE HISTORIC PRESERVATION OFFICER;
NEBRASKA STATE HISTORIC PRESERVATION OFFICER;
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER;
UTAH STATE HISTORIC PRESERVATION OFFICER;
WYOMING STATE HISTORIC PRESERVATION OFFICER;
NATIONAL PARK SERVICE, INTERIOR REGIONS 6, 7, AND 8;
AND ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
DEPLOYMENT OF THE SENTINEL WEAPON SYSTEM AND DECOMMISSIONING AND DISPOSAL OF THE MINUTEMAN III WEAPON SYSTEM IN ARIZONA, COLORADO, MONTANA, NEBRASKA, NORTH DAKOTA, UTAH, AND WYOMING

UNITED STATES ARMY CORPS OF ENGINEERS, OMAHA DISTRICT (*CONCURRING PARTY*)

Date: 19 DEC 2022

MARK R. HIMES, P.E.
COL, EN
Commanding

PROGRAMMATIC AGREEMENT
AMONG
AIR FORCE GLOBAL STRIKE COMMAND;
AIR FORCE MATERIEL COMMAND;
THREE AFFILIATED TRIBES OF THE MANDAN, HIDATSA, AND ARIKARA NATION;
ARIZONA STATE HISTORIC PRESERVATION OFFICER;
COLORADO STATE HISTORIC PRESERVATION OFFICER;
MONTANA STATE HISTORIC PRESERVATION OFFICER;
NEBRASKA STATE HISTORIC PRESERVATION OFFICER;
NORTH DAKOTA STATE HISTORIC PRESERVATION OFFICER;
UTAH STATE HISTORIC PRESERVATION OFFICER;
WYOMING STATE HISTORIC PRESERVATION OFFICER;
NATIONAL PARK SERVICE, INTERIOR REGIONS 6, 7, AND 8;
AND ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING
DEPLOYMENT OF THE SENTINEL WEAPON SYSTEM AND DECOMMISSIONING AND DISPOSAL OF THE MINUTEMAN III WEAPON SYSTEM IN ARIZONA, COLORADO, MONTANA, NEBRASKA, NORTH DAKOTA, UTAH, AND WYOMING

ASSOCIATION OF AIR FORCE MISSILEERS (*CONCURRING PARTY*)

James F. Warner Date: 18 December 2022

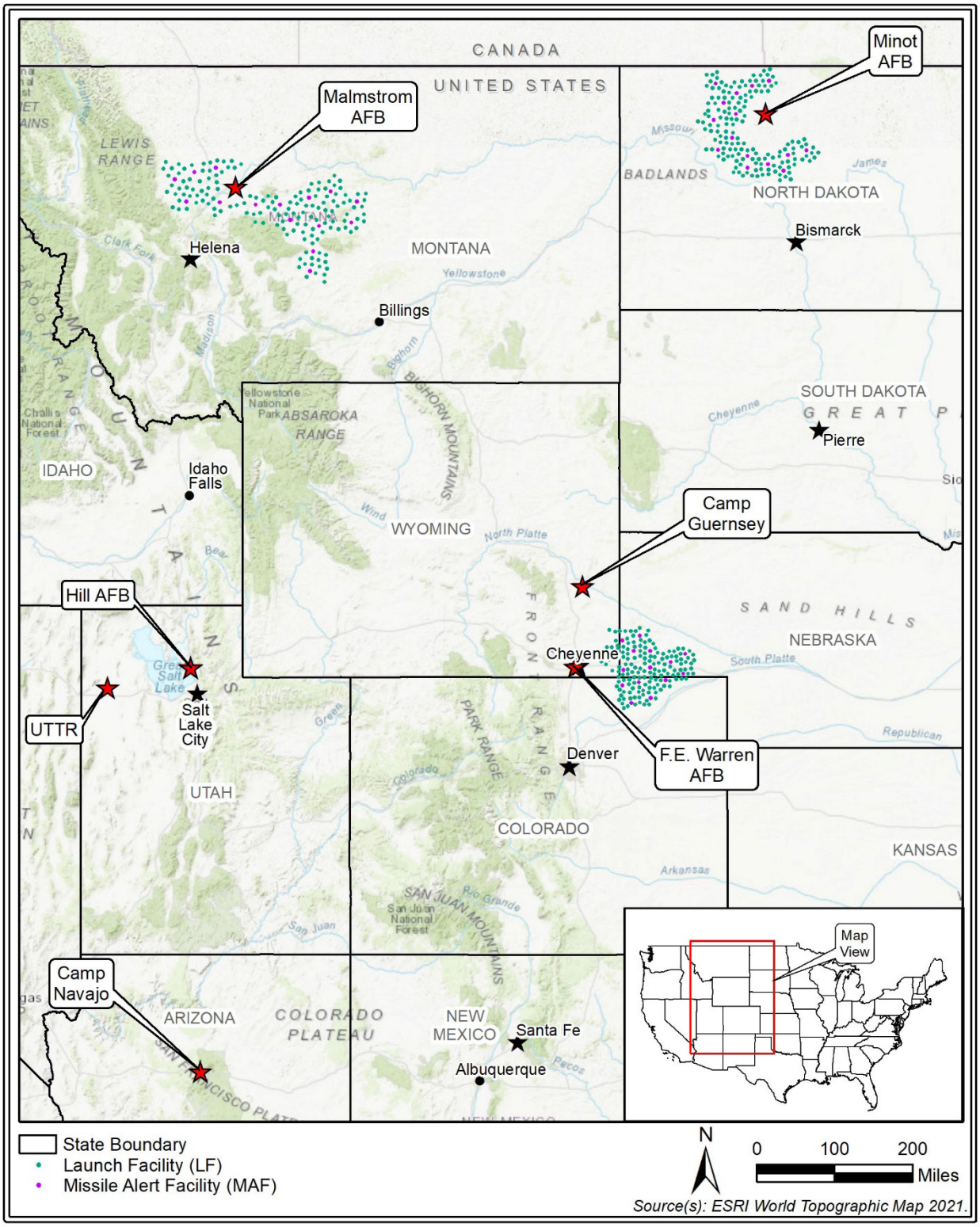
James F. Warner
Executive Director

LIST OF ACRONYMS

ACHP	Advisory Council on Historic Preservation
AFB	Air Force Base
AFGSC	Air Force Global Strike Command
AFMC	Air Force Materiel Command
AFNWC	Air Force Nuclear Weapons Center
AFNWC/NX	Air Force Nuclear Weapons Center, Sentinel Systems Directorate
APE	area of potential effects
ARPA	Archaeological Resources Protection Act
BLM	Bureau of Land Management
BOR	Bureau of Reclamation
Data Recovery MS	Data Recovery Management Summary
Data Recovery WP	Data Recovery Work Plan
C.F.R.	*Code of Federal Regulations*
CR-COP	(Sentinel) Cultural Resource-Common Operational Picture
CUI	Controlled Unclassified Information
DAF	Department of the Air Force
DoD	Department of Defense
EIS	Environmental Impact Statement
email	electronic mail
EO	Executive Order
FCC	Federal Communications Commission
FOIA	Freedom of Information Act
F.R.	Federal Register
FWS	Fish and Wildlife Service
GIS	geographic information system
HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
HALS	Historic American Landscape Survey
HLCNF	Helena-Lewis and Clark National Forest
LF	launch facility
LiDAR	light detection and ranging
LOC	Library of Congress

LOE	line of effort
MAF	missile alert facility
MHA Nation	Three Affiliated Tribes of the Mandan, Hidatsa, and Arikara Nation
Monitoring MS	Monitoring Management Summary
Monitoring WP	Monitoring Work Plan
NAGPRA	Native American Graves Protection and Repatriation Act
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NPNHT	Nez Perce (Nee-Me-Poo) National Historic Trail
NPS	National Park Service
PNG	Pawnee National Grassland
ROD	Record Of Decision
SATF	Site Activation Task Force
SHPO	State Historic Preservation Officer
SOI	Secretary of the Interior
Survey MS	Survey Management Summary
Survey WP	Survey Work Plan
TCS	Tribal Cultural Specialist
THPO	Tribal Historic Preservation Officer
TNTCX	(U.S. Army Corps of Engineers) Tribal Nations Technical Center of Excellence
Tribe	federally recognized Indian Tribe
USACE	U.S. Army Corps of Engineers
U.S.C.	*United States Code*
UTTR	Utah Test and Training Range
WSP	Wing Survey Plan

APPENDIX A
Programmatic Agreement Area of Potential Effects



Programmatic Agreement Area of Potential Effects (Agreement APE)

APPENDIX B
Descriptions and Maps of the Standard Areas of Potential Effects

Descriptions and Maps of the Standard Areas of Potential Effects

The following are descriptions of the standard areas of potential effects (APEs) for the elements of the Sentinel Undertaking. The APEs for individual action consultations can be modified depending on the characteristics of the specific action and the nature of the project area. Modification would occur through consultation on the Survey Work Plans (Survey WPs) developed for individual cultural resource investigations, as described in Stipulation VI. These descriptions are followed by maps illustrating the APEs.

Convert Missile Alert Facilities (MAFs) and Launch Facilities (LFs) (Line of Effort [LOE] #1).

- For physical effects, the APE will include the area within the current Air Force security fence. Also included in the Physical APE will be a 210-foot-wide area for potential construction use (such as a temporary staging area) surrounding each MAF and LF with an additional 100-foot-wide buffer where no activities would be planned.
- The new surface facilities would be similar to the existing facilities in form, size, and operation, resulting in little change to the appearance and visibility of the facilities. However, a new communications support building would be erected at each MAF which would be an additional building. Construction activities would be extensive at both the LFs and MAFs, introducing particulates into the atmosphere. Therefore, the following will be the Setting APEs:
  - For LFs, a half-mile radius Setting APE for atmospheric effects.
  - For MAFs, a Setting APE that includes the surrounding area that has line-of-sight to the MAF within a maximum 5-mile radius of the MAF for atmospheric and visual effects.

Construct New Utility Corridors and Add Utility Components to Existing Utility Corridors (LOE #2).

- For physical effects, the APE will be the temporary work area (measuring between 25 and 100 feet wide) plus 50 feet on each side, for a total APE width varying between 125 and 200 feet.
- In locations where directional drilling would be implemented, the Physical APE will be widened as needed to accommodate the area to be disturbed and the temporary work area needed to complete the directional drilling, plus a buffer measuring 50 feet wide surrounding it where no activities are planned.
- Due to the limited construction activity associated with the corridors, no APE is proposed for assessing atmospheric effects.
- Because the utilities would be underground, visual, and auditory effects on the settings of cultural resources would be unlikely, and thus no standard Setting APE is proposed. However, should Project activities result in the placement of an above-ground object or structure, a Setting APE will be identified and evaluated on a case-by-case basis.

Construct New Communication Towers with Guy Wires, Access, and Utilities (LOE #3).

- Physical APEs
  - For the construction of the communication towers, the standard APE for physical effects will be a 5-acre work area, which would encompass all construction activities, including parking of equipment and vehicles, foundations for guy wires, staging of materials, and laydown. In addition, this APE will include a 100-foot-wide buffer surrounding the construction work area where no activities would be planned.
  - For the access roads, the standard APE for physical effects will encompass a 50-foot-wide construction corridor plus an additional 25-foot-wide buffer on each side where no activities would occur. These roads would be permanently maintained.

  - For the utilities that cannot be sited within the access road construction corridor, the standard APE for physical effects will be a 25-foot-wide construction corridor plus an additional 25-foot-wide buffer on each side where no activities would occur.
  - In locations where directional drilling would be implemented for utilities, the Physical APE will be widened as needed to accommodate the area to be disturbed, the surrounding temporary work area needed to complete the directional drilling, and a buffer measuring 50 feet wide surrounding the temporary work area where no activities are planned.
- Setting APEs
  - The communication towers would be 300 feet in height, introducing a visual element into the landscape that could have the potential to affect the settings of historic properties. The Setting APE will include the surrounding area that has line-of-sight to the top of the tower within a maximum 20-mile radius of the center point of the tower.
  - Analysis of atmospheric effects will be conducted within the same Setting APE as for visual effects.
  - AFNWC/NX has identified the potential for the introduction of noise from wind passing through towers and guy wires. As design of the towers and guy wires is developed, AFNWC/NX will identify an appropriate APE for analyzing the effects of noise and will consult with the Signatories, Concurring Parties, and Tribes on that APE.

<u>Construct or Renovate On-installation Facilities and Utilities (LOE #4)</u>

- For the construction of facilities, the standard APE for physical effects will be the construction work area that includes the footprint of the facility and any associated support infrastructure such as parking areas and access roads, plus the surrounding temporary work areas needed to allow for construction activities such as parking of equipment and vehicles, staging of materials, laydown, and so forth. In addition, this APE will include a 100-foot-wide buffer surrounding the construction work area where no activities would be planned.
- For renovation of a facility, the APE will be the facility itself plus any temporary work areas needed to support the activity and include a 100-foot-wide buffer zone surrounding those work areas.
- The APE for visual, auditory, or atmospheric effects will be dependent on the size of the proposed facility, the construction methods to be used, and the associated construction work area and will be determined on a case-by-case basis.
- For the extension of utilities to new facilities, the standard APE for physical effects will be 25-foot-wide corridor needed for the construction activities and temporary work areas, plus a 25-foot-wide buffer on both sides of the construction corridor.

<u>Develop Workforce Hubs and Laydown Areas (LOE #5).</u>

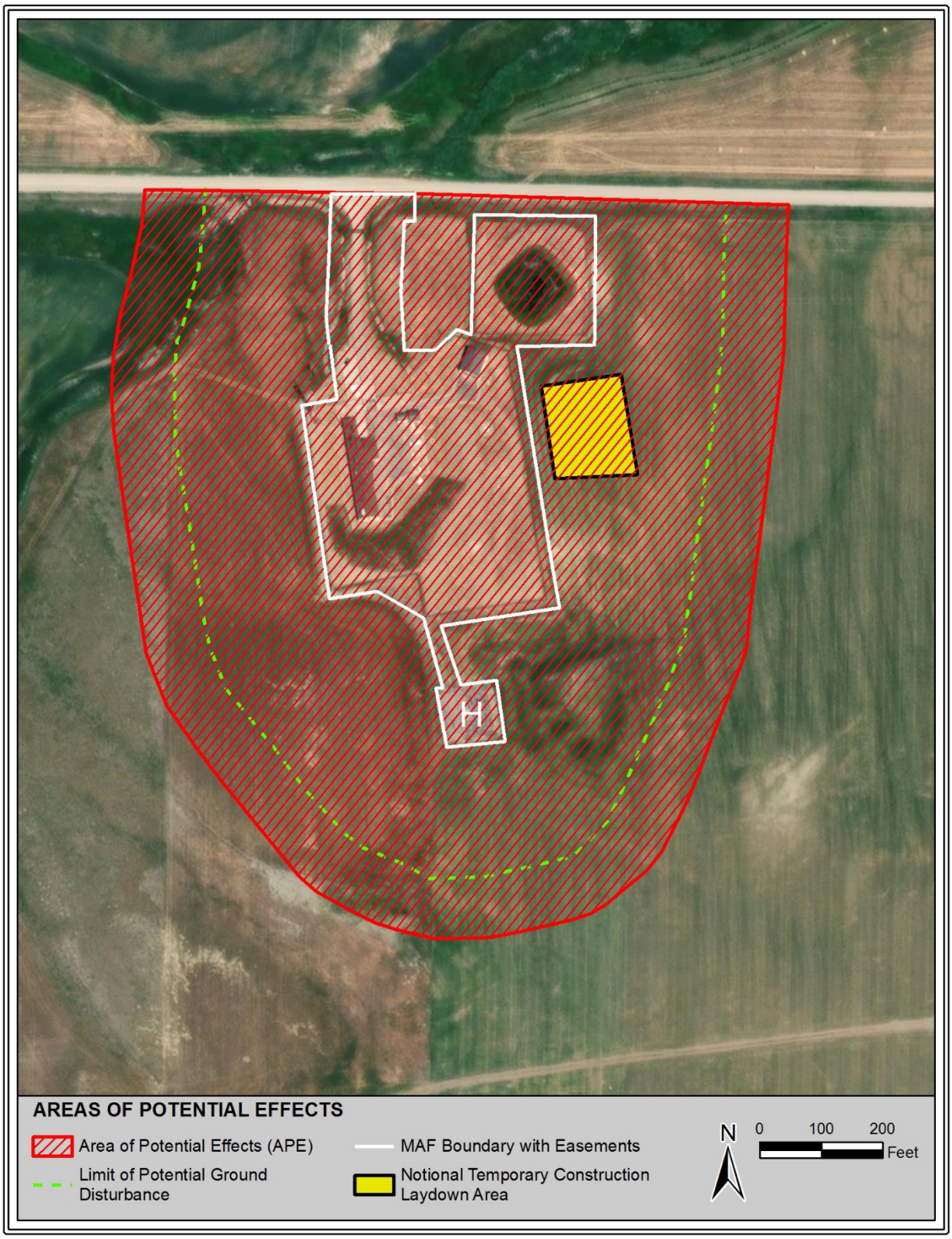
- For physical effects, the standard Physical APE will include the area of the hub or laydown area plus a 100-foot-wide buffer surrounding it where no activities are planned.
- If access roads are needed, the standard Physical APE will encompass a 50-foot-wide construction corridor plus an additional 25-foot-wide buffer on each side where no activities would occur.
- If it is determined that extension of utilities is required and the utilities cannot be incorporated into an access road corridor, the standard APE for physical effects will be a 25-foot-wide corridor plus an additional 25-foot-wide buffer on each side where no activities would occur.
- In locations where directional drilling would be implemented, the Physical APE will be widened as needed to accommodate the area to be disturbed, the surrounding temporary work area needed

to complete the directional drilling, and a buffer measuring 50 feet wide surrounding the temporary work area where no activities occur.

- The hubs and laydown areas and associated operational activities would introduce visual, audible, and atmospheric elements into the landscape that could have the potential to affect the settings of historic properties. The standard APE for effects on settings will include a 1-mile radius surrounding the hub or laydown area.

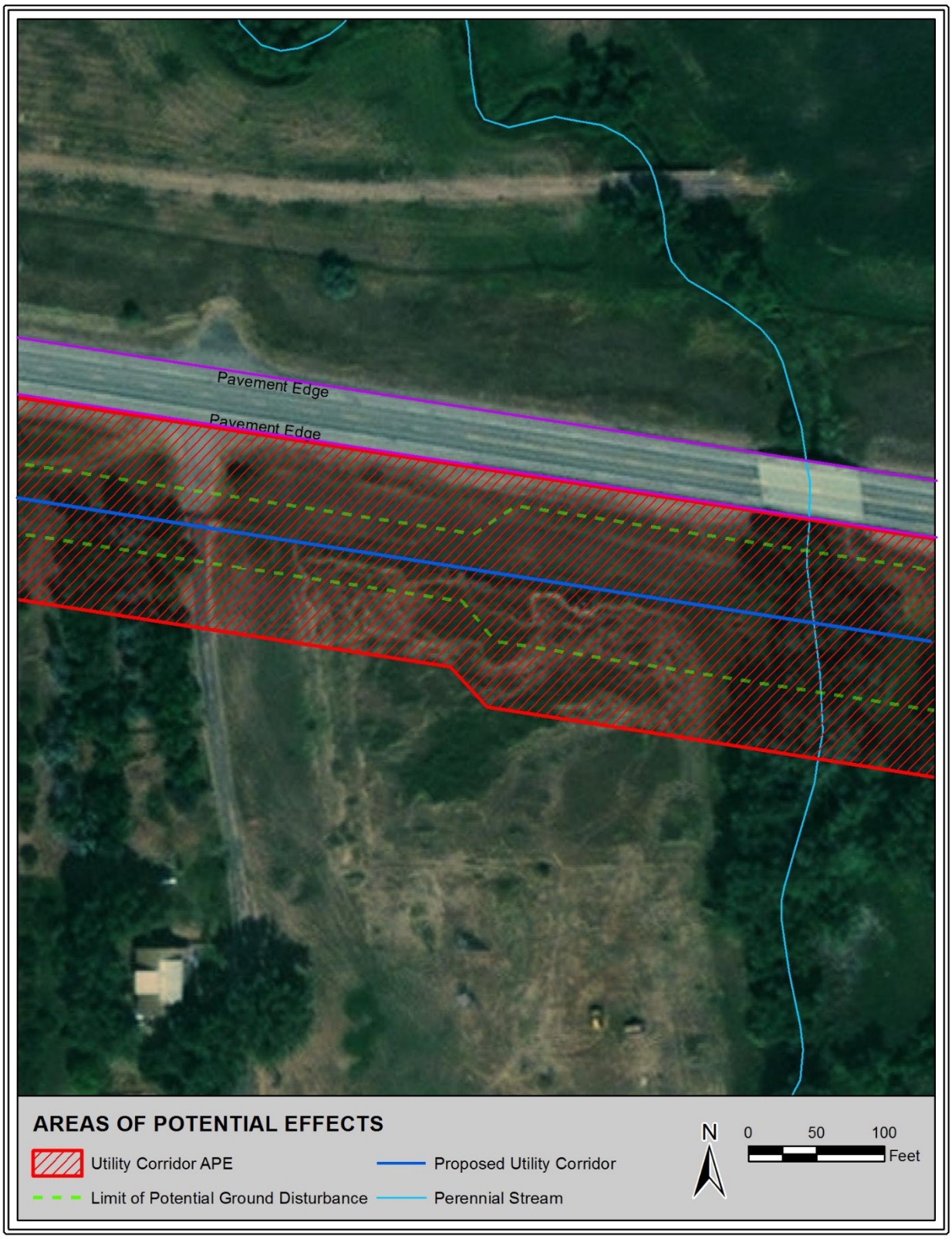
Decommission and dispose of Minuteman III

- All activities associated with the decommissioning and disposal of the Minuteman III weapon system would occur within areas that currently support these activities or areas that would be assessed during the construction and renovation activities discussed above.
- There are no additional APEs developed for these activities.
- These activities will be assessed for their potential effects to cultural resources and historic properties within the APEs defined above.

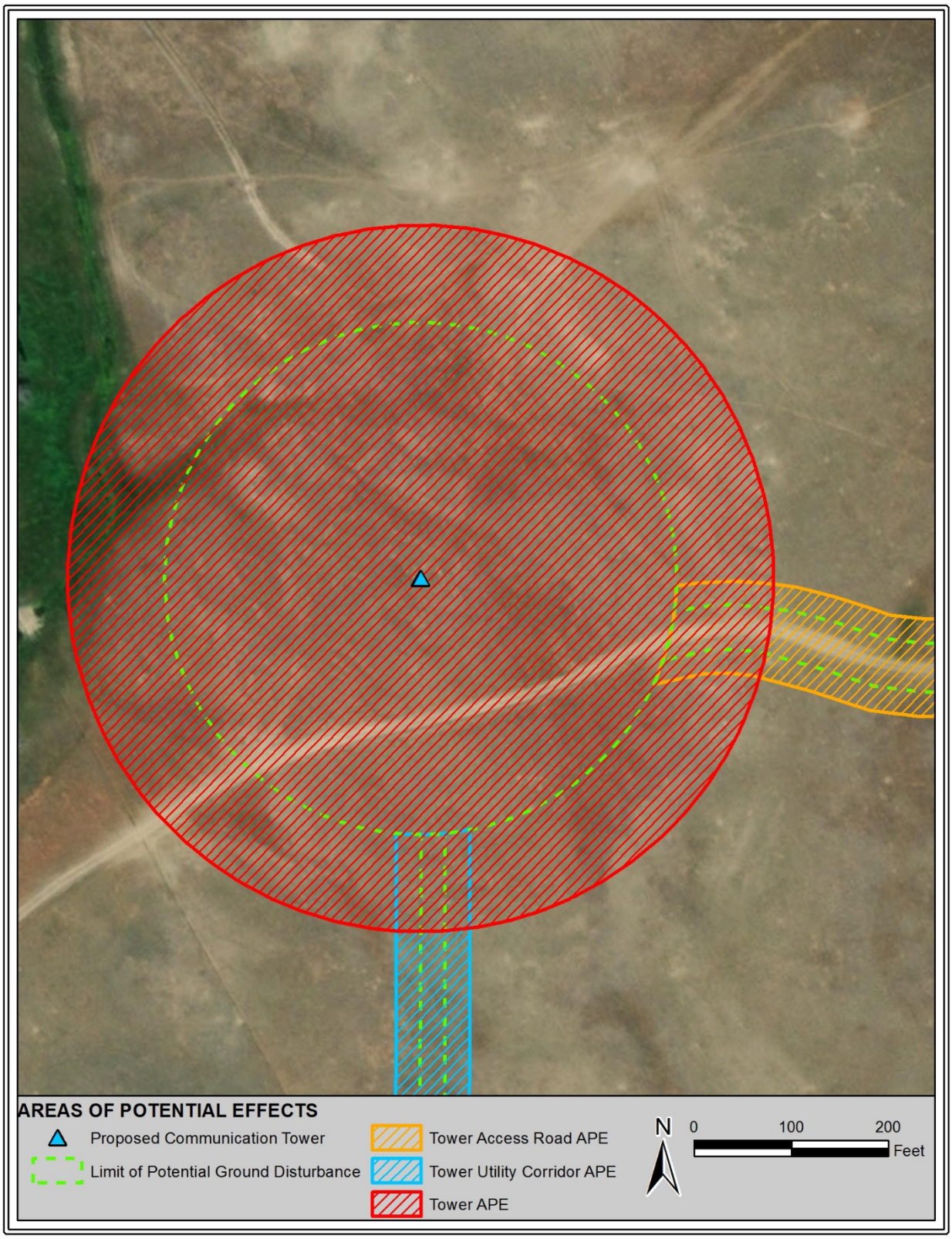


Map showing the Physical APE for the MAFs (LOE #1)

Map showing the Physical APE for the LFs (LOE #1)

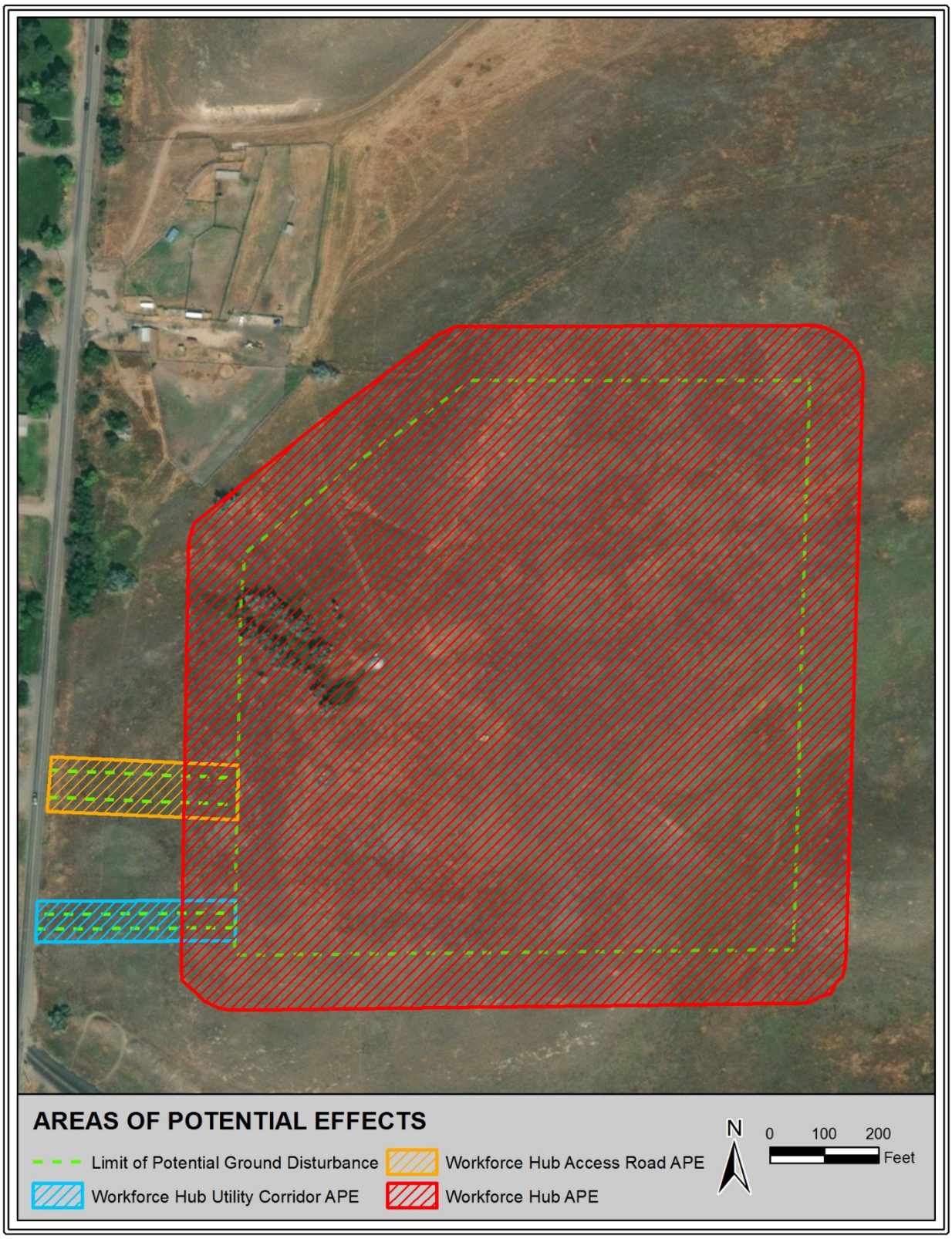


Map showing the Physical APE for the utility corridors (LOE #2)



Map showing the Physical APE for the communication towers (LOE #3)

Map showing the Physical APE for on-installation facilities (LOE #4)



Map showing the Physical APE for laydown areas and workforce hubs (LOE #5)

APPENDIX C
Minuteman III Properties Included in this Agreement

Minuteman III Properties Included in this Agreement

This appendix identifies the buildings and structures in the missile fields and on Department of Air Force (DAF) installations within this Agreement's area of potential effects (APE) that are associated with the Minuteman III weapons system, and documents their eligibility or ineligibility for listing on the National Register of Historic Places (NRHP) as historic properties. This appendix will allow present and future DAF cultural resource personnel, Tribal Historic Preservation Officers (THPOs), State Historic Preservation Officers (SHPOs), and Concurring Parties a single source document to use in the evaluation of Minuteman III properties.

A. Missile Fields. Per this Agreement, DAF will establish a historic district for each missile field and ensure that each MAF or LF is assigned an individual Smithsonian Trinomial Site Number. The individual features at each MAF or LF will be identified under this single site number with a common feature numbering system to allow for easy comparison of features at each site.

   1. The documentation for the establishment of the historic districts will be completed within ninety (90) days of the execution of this Agreement.

   2. The historic districts will be named:

      a) F.E. Warren Air Force Base Missile Field Historic District. This historic district, located in Colorado, Nebraska, and Wyoming, will be coordinated with the Colorado, Nebraska, and Wyoming SHPOs. The contributing MAFs and LFs to the district are detailed in Table 1.

      b) Malmstrom Air Force Base Missile Field Historic District. This historic district, located in Montana, will be coordinated with the Montana SHPO. The contributing MAFs and LFs to the district are detailed in Table 2.

      c) Minot Air Force Base Missile Field Historic District. This historic district, located in North Dakota, will be coordinated with the Mandan, Hidatsa and Arikara Nation (MHA Nation) THPO and the North Dakota SHPO. The contributing MAFs and LFs to the district are detailed in Table 3.

   3. The utility cables connecting the MAFs and LFs to each other, associated junction boxes, and line marker posts are evaluated as non-contributing infrastructure. Each missile field contains approximately 4,000 miles of utility corridors supporting the Minuteman III weapon system. These cables, junction boxes, and marker posts are not individually listed in this document.

   4. This Agreement supersedes any existing installation determinations of eligibility related to the Minuteman III ICBM program and its infrastructure with the APE of this Agreement, and will remove all three missile fields from inclusion in any current historic districts.

B. On-Base (F.E. Warren AFB, Malmstrom AFB, Minot AFB, Hill AFB, and the UTTR) Minuteman III Facilities and Structures.

   1. Minuteman III Operations and Maintenance Related Buildings and Structures. Minuteman III operations and maintenance buildings and structures located within the installation boundaries (excluding the missile fields) and not previously identified as individually eligible to the National Register for their association with the Minuteman III or earlier ICBM programs under Criterion A will not be considered eligible for the National Register for association with the Minuteman III or earlier ICBM programs in the future as they were

evaluated for these periods under the DoD's Cold War studies. These buildings and structures may still be eligible under the remaining criterion or under Criterion A for historical periods other than the Minuteman III and Cold War periods.

2. Support Buildings and Structures. On-base buildings and structures built to support administration; life support; and moral, welfare, and recreation of servicemembers and their families during the Minuteman III and earlier ICBM programs are not individually eligible to the National Register for their association with the Minuteman III or earlier ICBM programs under Criterion A. They will not be considered eligible for the National Register for association with the Minuteman III or earlier ICBM programs in the future as they were evaluated for these periods under the DOD's Cold War studies. These buildings and structures may still be eligible under the remaining criterion or for Criterion A for historical periods other than the Minuteman III and Cold War periods.

TABLES (Contained within separate accompanying document titled "DFPA4_Appendix_C_Tables.pdf")

Table 1: F.E. Warren AFB Missile Field Historic District

Table 2: Malmstrom AFB Missile Field Historic District

Table 3: Minot AFB Missile Field Historic District

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • A1 • MAF • Site Code GHRA0001	48GO419	MISSILE ALERT FACILITY	101	1-Jan-64	9-Jan-01	NREI	1457	141911
		BOUNDARY FENCE	111	1-Jan-64	9-Jan-01	NREI	8721	872245
		DIESEL STORAGE	105	1-Jan-64	9-Jan-01	NEV	1243	124234
			130	1-Jan-80	9-Jan-01	NEV		124137
			131	1-Jan-80	9-Jan-01	NEV		124134
			133	1-Jan-64	9-Jan-01	NEV		124134
			134	1-Jan-64	9-Jan-01	NEV		124234
		EXTERIOR AREA LIGHTING	110	1-Jan-64	9-Jan-01	NEV	8122	812926
		SECURITY FENCE	112	1-Jan-64	9-Jan-01	NREI	8722	872247
		FLAG POLE BASE	127	1-Jan-91	9-Jan-01	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	125	1-Jan-66	9-Jan-01	NREI	4425	214426
		GREASE TRAP	137	12-Jan-12	9-Jan-01	NREI	8314	831169
		HELICOPTER PAD	126	1-Jan-69	9-Jan-01	NREI	1112	116663
		PIPELINE, LIQUID FUEL	106	1-Jan-64	9-Jan-01	NEV	1251	125553
		WATER WELL	119	28-Jul-11	9-Jan-01	NEV	8414	841166
		ROAD	113	1-Jan-64	9-Jan-01	NREI	8511	851147
			115	1-Jan-64	9-Jan-01	NREI	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	114	1-Jan-64	9-Jan-01	NREI	8521	852262
		PRIMARY OVERHEAD DISTRIBUTION LINE	124	1-Jan-66	9-Jan-01	NEV	8121	812223
		RVA TOWER	129	1-Jun-10	9-Jan-01	NEV	1321	132134
		SANITARY SEWAGE MAIN	108	1-Jan-64	9-Jan-01	NEV	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	109	1-Jan-64	9-Jan-01	NEV	8123	812226
		SEWAGE TREATMENT AND DISPOSAL	107	1-Jan-91	9-Jan-01	NEV	8315	831511
		SIDEWALK	3110	30-Jul-97	9-Jan-01	NEV	8524	852289
		SILO, HDANT HF	117	1-Jan-64	9-Jan-01	NEV	1321	132131
		WATER DISTRIBUTION MAIN	104	1-Jan-64	9-Jan-01	NEV	8421	842245
		WATER TANK	103	1-Jan-64	1-Jan-64	NEV	8413	841427
F.E. Warren AFB • A2 • LF • Site Code GHRB0001	48LA1984	MISSILE LAUNCH FACILITY	201	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	206	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	203	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	202	1-Jan-64	9-Jan-01	NREI	8910	811149
		EXTERIOR AREA LIGHTING	213	1-Jan-64	9-Jan-01	NEV	8122	812926
		SECURITY FENCE	208	1-Jan-64	9-Jan-01	NREI	8722	872247
		PIPELINE, LIQUID FUEL	204	1-Jan-64	9-Jan-01	NEV	1251	125553
		WATER WELL	218	1-Jan-64	9-Jan-01	NEV	8414	841166
		ROAD	209	1-Jan-64	9-Jan-01	NREI	8512	851201
		ROAD	210	1-Jan-64	9-Jan-01	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	205	1-Jan-64	9-Jan-01	NEV	8123	812226
F.E. Warren AFB • A3 • LF • Site Code GHRC0001	48LA1985	MISSILE LAUNCH FACILITY	301	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	306	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	303	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	302	1-Jan-64	9-Jan-01	NREI	8910	811149
		EXTERIOR AREA LIGHTING	313	1-Jan-64	9-Jan-01	NEV	8122	812926
		SECURITY FENCE	308	1-Jan-64	9-Jan-01	NREI	8722	872247
		PIPELINE, LIQUID FUEL	304	1-Jan-64	9-Jan-01	NEV	1251	125553
		ROAD	309	1-Jan-64	9-Jan-01	NREI	8511	851147
		ROAD	310	1-Jan-64	9-Jan-01	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	305	1-Jan-64	9-Jan-01	NEV	8123	812226
F.E. Warren AFB • A4 • LF • Site Code GHRD0001	48LA1986	MISSILE LAUNCH FACILITY	401	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	406	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	403	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	402	1-Jan-64	9-Jan-01	NREI	8910	811149
		EXTERIOR AREA LIGHTING	413	1-Jan-64	9-Jan-01	NEV	8122	812926
		SECURITY FENCE	408	1-Jan-64	9-Jan-01	NREI	8722	872247
		PIPELINE, LIQUID FUEL	404	1-Jan-64	9-Jan-01	NEV	1251	125553
		WATER WELL	418	1-Jan-64	9-Jan-01	NEV	8414	841166

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
		ROAD	409	1-Jan-64	9-Jan-01	NREI	8511	851147
			410	1-Jan-64	9-Jan-01	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	405	1-Jan-64	9-Jan-01	NEV	8123	812226
F.E. Warren AFB • A5 • LF • Site Code GHRE0001	48LA1987	MISSILE LAUNCH FACILITY	501	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	506	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	503	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	502	1-Jan-64	9-Jan-01	NREI	8910	811149
		EXTERIOR AREA LIGHTING	513	1-Jan-64	9-Jan-01	NEV	8122	812926
		SECURITY FENCE	508	1-Jan-64	9-Jan-01	NREI	8722	872247
		PIPELINE, LIQUID FUEL	504	1-Jan-64	9-Jan-01	NEV	1251	125553
		WATER WELL	518	1-Jan-64	9-Jan-01	NEV	8414	841166
		ROAD	509	1-Jan-64	9-Jan-01	NREI	8511	851147
			510	1-Jan-64	9-Jan-01	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	505	1-Jan-64	9-Jan-01	NEV	8123	812226
F.E. Warren AFB • A6 • LF • Site Code GHRF0001	48LA1988	MISSILE LAUNCH FACILITY	601	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	606	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	603	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	602	1-Jan-64	9-Jan-01	NREI	8910	811149
		EXTERIOR AREA LIGHTING	613	1-Jan-64	9-Jan-01	NEV	8122	812926
		SECURITY FENCE	608	1-Jan-64	9-Jan-01	NREI	8722	872247
		PIPELINE, LIQUID FUEL	604	1-Jan-64	9-Jan-01	NEV	1251	125553
		WATER WELL	618	1-Jan-64	9-Jan-01	NEV	8414	841166
		ROAD	609	1-Jan-64	9-Jan-01	NREI	8511	851147
			610	1-Jan-64	9-Jan-01	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	605	1-Jan-64	9-Jan-01	NEV	8123	812226
F.E. Warren AFB • A7 • LF • Site Code GHRG0001	48LA1989	MISSILE LAUNCH FACILITY	701	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	706	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	703	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	707	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	702	1-Jan-64	9-Jan-01	NREI	8910	811149
		EXTERIOR AREA LIGHTING	713	1-Jan-64	9-Jan-01	NEV	8122	812926
		SECURITY FENCE	708	1-Jan-64	9-Jan-01	NREI	8722	872247
		PIPELINE, LIQUID FUEL	704	1-Jan-64	9-Jan-01	NEV	1251	125553
		WATER WELL	718	1-Jan-64	9-Jan-01	NEV	8414	841166
		ROAD	709	1-Jan-64	9-Jan-01	NREI	8511	851147
			710	1-Jan-64	9-Jan-01	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	705	1-Jan-64	9-Jan-01	NEV	8123	812226
F.E. Warren AFB • A8 • LF • Site Code GHRH0001	48LA1990	MISSILE LAUNCH FACILITY	801	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	806	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	803	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	802	1-Jan-64	9-Jan-01	NREI	8910	811149
		EXTERIOR AREA LIGHTING	813	1-Jan-64	9-Jan-01	NEV	8122	812926
		SECURITY FENCE	808	1-Jan-64	9-Jan-01	NREI	8722	872247
		PIPELINE, LIQUID FUEL	804	1-Jan-64	9-Jan-01	NEV	1251	125553
		WATER WELL	818	1-Jan-64	9-Jan-01	NEV	8414	841166
		ROAD	809	1-Jan-64	9-Jan-01	NREI	8511	851147
			810	1-Jan-64	9-Jan-01	NEV		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	805	1-Jan-64	9-Jan-01	NEV	8123	812226
F.E. Warren AFB • A9 • LF • Site Code GHRJ0001	48LA1991	MISSILE LAUNCH FACILITY	901	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	906	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	903	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	902	1-Jan-64	9-Jan-01	NREI	8910	811149
		EXTERIOR AREA LIGHTING	913	1-Jan-64	9-Jan-01	NEV	8122	812926
		SECURITY FENCE	908	1-Jan-64	9-Jan-01	NREI	8722	872247
		PIPELINE, LIQUID FUEL	904	1-Jan-64	9-Jan-01	NEV	1251	125553
		WATER WELL	918	1-Jan-64	9-Jan-01	NEV	8414	841166

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
		ROAD	909	1-Jan-64	9-Jan-01	NREI	8511	851147
			910	1-Jan-64	9-Jan-01	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	905	1-Jan-64	9-Jan-01	NEV	8123	812226
F.E. Warren AFB • A10 • LF • Site Code GHRK0001	**48LA1992**	MISSILE LAUNCH FACILITY	1001	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1006	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1003	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1002	1-Jan-64	9-Jan-01	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1013	1-Jan-64	1-Jan-64	NEV	8122	812926
		SECURITY FENCE	1008	1-Jan-64	9-Jan-01	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1004	1-Jan-64	9-Jan-01	NEV	1251	125553
		WATER WELL	1018	1-Jan-64	9-Jan-01	NEV	8414	841166
		ROAD	1009	1-Jan-64	9-Jan-01	NREI	8511	851147
			1010	1-Jan-64	9-Jan-01	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1005	1-Jan-64	9-Jan-01	NEV	8123	812226
F.E. Warren AFB • A11 • LF • Site Code GHRL0001	**48LA1993**	MISSILE LAUNCH FACILITY	1101	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1106	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1103	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1102	1-Jan-64	9-Jan-01	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1113	1-Jan-64	1-Jan-64	NEV	8122	812926
		SECURITY FENCE	1108	1-Jan-64	9-Jan-01	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1104	1-Jan-64	9-Jan-01	NEV	1251	125553
		WATER WELL	1118	1-Jan-64	9-Jan-01	NEV	8414	841166
		ROAD	1109	1-Jan-64	9-Jan-01	NREI	8511	851147
			1110	1-Jan-64	9-Jan-01	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1105	1-Jan-64	9-Jan-01	NEV	8123	812226
F.E. Warren AFB • B1 • MAF • Site Code GHRM0001	**NO00-091**	ANTENNA SUPPORT STRUCTURE	136	1-Jan-93	9-Jan-01	NEV	1321	132134
		MISSILE OPERATIONS BUILDING	101	1-Jan-64	16-Dec-92	NREI	1457	141911
		RADIO RELAY FACILITY	140	30-Nov-09	16-Dec-92	NEV	1311	131118
		BOUNDARY FENCE	111	1-Jan-64	16-Dec-92	NREI	8721	872245
		DIESEL STORAGE	105	1-Jan-64	16-Dec-92	NEV	1243	124234
			131	1-Jan-81	16-Dec-92	NEV	1243	124137
			132	1-Jan-80	16-Dec-92	NEV	1243	124134
			133	1-Jan-64	16-Dec-92	NEV	1243	124134
			134	1-Jan-64	16-Dec-92	NEV	1243	124234
		STORM DRAIN DISPOSAL	128	1-Jan-70	16-Dec-92	NEV	8321	871183
		EXTERIOR AREA LIGHTING	110	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	112	1-Jan-64	16-Dec-92	NREI	8722	872247
		FLAG POLE BASE	127	1-Jan-91	16-Dec-92	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	125	1-Jan-66	16-Dec-92	NREI	4425	214426
		GREASE TRAP	137	10-Jan-12	16-Dec-92	NREI	8314	831169
		HELICOPTER PAD	126	1-Jan-69	16-Dec-92	NREI	1112	116663
		PIPELINE, LIQUID FUEL	106	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	119	28-Jul-11	16-Dec-92	NEV	8414	841166
		ROAD	113	1-Jan-64	16-Dec-92	NREI	8511	851147
			115	1-Jan-64	16-Dec-92	NREI		851147
		VEHICLE PARKING NON ORGANIZATIONAL	114	1-Jan-64	16-Dec-92	NREI	8521	852262
		PRIMARY OVERHEAD DISTRIBUTION LINE	124	1-Jan-66	16-Dec-92	NEV	8121	812223
		SANITARY SEWAGE MAIN	108	1-Jan-64	16-Dec-92	NEV	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	109	1-Jan-64	16-Dec-92	NEV	8123	812226
		SEWAGE TREATMENT AND DISPOSAL	107	1-Jan-91	16-Dec-92	NEV	8315	831511
		SIDEWALK	3110	15-May-97	16-Dec-92	NEV	8524	852289
		SILO, HDANT HF	117	1-Jan-64	16-Dec-92	NEV	1321	132131
		TOWER, SP	130	1-Jan-64	16-Dec-92	NEV	1499	149968
		WATER DISTRIBUTION MAIN	104	1-Jan-64	16-Dec-92	NEV	8421	842245
		WATER TANK	103	1-Jan-64	1-Jan-64	NEV	8413	841427
		MISSILE LAUNCH FACILITY	201	1-Jan-64	17-Oct-00	NREI	1451	149512

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • B2 • LF • Site Code GHRN0001	BN00-092	UTILITY LINE DUCTS	206	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	203	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	202	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	213	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	208	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	204	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	218	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	209	1-Jan-64	16-Dec-92	NREI	8511	851147
			210	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	205	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • B3 • LF • Site Code GHRP0001	BN00-091	MISSILE LAUNCH FACILITY	301	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	306	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	303	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	302	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	313	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	308	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	304	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	318	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	309	1-Jan-64	16-Dec-92	NREI	8511	851147
			310	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	305	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • B4 • LF • Site Code GHRQ0001	BN00-094	MISSILE LAUNCH FACILITY	401	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	406	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	403	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	402	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	413	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	408	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	404	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	418	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	409	1-Jan-64	16-Dec-92	NREI	8511	851147
			410	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	405	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • B5 • LF • Site Code GHRR0001	BN00-095	MISSILE LAUNCH FACILITY	501	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	506	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	503	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	502	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	513	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	508	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	504	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	518	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	509	1-Jan-64	16-Dec-92	NREI	8511	851147
			510	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	505	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • B6 • LF • Site Code GHRS0001	BN00-096	MISSILE LAUNCH FACILITY	601	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	606	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	603	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	602	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	613	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	608	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	604	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	618	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	609	1-Jan-64	16-Dec-92	NREI	8511	851147
			610	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	605	1-Jan-64	16-Dec-92	NEV	8123	812226
		MISSILE LAUNCH FACILITY	701	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	706	1-Jan-64	17-Oct-00	NEV	8932	890181

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • B7 • LF • Site Code GHRT0001	48LA1996	DIESEL STORAGE	703	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	707	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	702	1-Jan-64	9-Jan-01	NREI	8910	811149
		EXTERIOR AREA LIGHTING	713	1-Jan-64	9-Jan-01	NEV	8122	812926
		SECURITY FENCE	708	1-Jan-64	9-Jan-01	NREI	8722	872247
		PIPELINE, LIQUID FUEL	704	1-Jan-64	9-Jan-01	NEV	1251	125553
		WATER WELL	718	1-Jan-64	9-Jan-01	NEV	8414	841166
		ROAD	709	1-Jan-64	9-Jan-01	NREI	8511	851147
			710	1-Jan-64	9-Jan-01	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	705	1-Jan-64	9-Jan-01	NEV	8123	812226
F.E. Warren AFB • B8 • LF • Site Code GHRU0001	48LA1999	MISSILE LAUNCH FACILITY	801	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	806	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	803	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	807	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	802	1-Jan-64	9-Jan-01	NREI	8910	811149
		EXTERIOR AREA LIGHTING	813	1-Jan-64	9-Jan-01	NEV	8122	812926
		SECURITY FENCE	808	1-Jan-64	9-Jan-01	NREI	8722	872247
		PIPELINE, LIQUID FUEL	804	1-Jan-64	9-Jan-01	NEV	1251	125553
		WATER WELL	818	1-Jan-64	9-Jan-01	NEV	8414	841166
		ROAD	809	1-Jan-64	9-Jan-99	NREI	8511	851147
			810	1-Jan-64	9-Jan-01	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	805	1-Jan-64	9-Jan-01	NEV	8123	812226
F.E. Warren AFB • B9 • LF • Site Code GHRV0001	48GO431	MISSILE LAUNCH FACILITY	901	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	906	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	903	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	902	1-Jan-64	9-Jan-01	NREI	8910	811149
		EXTERIOR AREA LIGHTING	913	1-Jan-64	9-Jan-01	NEV	8122	812926
		SECURITY FENCE	908	1-Jan-64	9-Jan-01	NREI	8722	872247
		PIPELINE, LIQUID FUEL	904	1-Jan-64	9-Jan-01	NEV	1251	125553
		ROAD	909	1-Jan-64	9-Jan-01	NREI	8511	851147
			910	1-Jan-64	9-Jan-01	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	905	1-Jan-64	9-Jan-01	NEV	8123	812226
F.E. Warren AFB • B10 • LF • Site Code GHRW0001	48GO432	MISSILE LAUNCH FACILITY	1001	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1006	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1003	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1002	1-Jan-64	9-Jan-01	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1013	1-Jan-64	1-Jan-64	NEV	8122	812926
		SECURITY FENCE	1008	1-Jan-64	9-Jan-01	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1004	1-Jan-64	9-Jan-01	NEV	1251	125553
		WATER WELL	1018	1-Jan-64	9-Jan-01	NEV	8414	841166
		ROAD	1009	1-Jan-64	9-Jan-01	NREI	8511	851147
			1010	1-Jan-64	9-Jan-01	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1005	1-Jan-64	9-Jan-01	NEV	8123	812226
F.E. Warren AFB • B11 • LF • Site Code GHRX0001	48GO433	MISSILE LAUNCH FACILITY	1101	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1106	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1103	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1102	1-Jan-64	9-Jan-01	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1113	1-Jan-64	9-Jan-01	NEV	8122	812926
		SECURITY FENCE	1108	1-Jan-64	9-Jan-01	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1104	1-Jan-64	9-Jan-01	NEV	1251	125553
		WATER WELL	1118	1-Jan-64	9-Jan-01	NEV	8414	841166
		ROAD	1109	1-Jan-64	9-Jan-01	NREI	8511	851147
			1110	1-Jan-64	9-Jan-01	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1105	1-Jan-64	9-Jan-01	NEV	8123	812226
		MISSILE OPERATIONS BUILDING	101	1-Jan-64	16-Dec-92	NREI	1457	141911
		BOUNDARY FENCE	111	1-Jan-64	16-Dec-92	NEV	8721	872245

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • C1 • MAF • Site Code GHRY0001	BN00-097	DIESEL STORAGE	105	1-Jan-64	16-Dec-92	NEV	1243	124234
			131	1-Jan-81	16-Dec-92	NEV	1243	124137
			132	1-Jan-80	16-Dec-92	NEV	1243	124134
			133	1-Jan-64	16-Dec-92	NEV	1243	124134
			134	1-Jan-64	16-Dec-92	NEV	1243	124234
		STORM DRAIN DISPOSAL	128	1-Jan-70	16-Dec-92	NEV	8321	871183
		DRIVEWAY	123	1-Jan-66	16-Dec-92	NREI	8511	851145
		EXTERIOR AREA LIGHTING	110	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	112		16-Dec-92	NREI	8722	872247
		FLAG POLE BASE	127	1-Jan-91	16-Dec-92	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	125	1-Jan-66	16-Dec-92	NREI	4425	214426
		GREASE TRAP	137	12-Jan-12	16-Dec-92	NREI	8314	831169
		HELICOPTER PAD	126	1-Jan-69	16-Dec-92	NREI	1112	116663
		PIPELINE, LIQUID FUEL	106	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	118	1-Jan-64	16-Dec-92	NEV	8414	841166
			119	1-Jan-69	16-Dec-92	NEV		841166
			121	30-Jul-08	16-Dec-92	NEV		841166
		ROAD	113	1-Jan-64	16-Dec-92	NREI	8511	851147
			115	1-Jan-64	16-Dec-92	NREI		851147
		VEHICLE PARKING NON ORGANIZATIONAL	114	1-Jan-64	16-Dec-92	NREI	8521	852262
		PRIMARY OVERHEAD DISTRIBUTION LINE	124	1-Jan-66	16-Dec-92	NEV	8121	812223
		RVA TOWER	129	1-Jun-10	16-Dec-92	NEV	1321	132134
		SANITARY SEWAGE MAIN	108	1-Jan-64	16-Dec-92	NEV	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	109	1-Jan-64	16-Dec-92	NEV	8123	812226
		SEWAGE SEPTIC TANK	120	1-Jan-96	16-Dec-92	NEV	8314	831169
		SEWAGE TREATMENT AND DISPOSAL	107	1-Jan-91	16-Dec-92	NEV		831169
		SIDEWALK	3110	30-Jul-97	16-Dec-92	NEV	8524	852289
		SILO, HDANT HF	117	1-Jan-64	16-Dec-92	NEV	1321	132131
		WATER DISTRIBUTION MAIN	104	1-Jan-91	16-Dec-92	NEV	8421	842245
		WATER TANK	103	1-Jan-91	16-Dec-92	NEV	8413	841427
F.E. Warren AFB • C2 • LF • Site Code GHRZ0001	BN00-098	MISSILE LAUNCH FACILITY	201	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	206	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	203	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	202	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	213	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	208	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	204	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	218	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	209	1-Jan-64	16-Dec-92	NREI	8511	851147
			210	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	205	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • C3 • LF • Site Code GHSA0001	BN00-099	MISSILE LAUNCH FACILITY	301	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	306	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	303	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	302	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	313	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	308	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	304	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	318	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	309	1-Jan-64	16-Dec-92	NREI	8511	851147
			310	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	305	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • C4 • LF		MISSILE LAUNCH FACILITY	401	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	406	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	403	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	402	1-Jan-64	16-Dec-92	NREI	8910	811149

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • C4 • LF • Site Code GHSB0001	**BN00-100**	EXTERIOR AREA LIGHTING	413	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	408	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	404	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	409	1-Jan-64	16-Dec-92	NREI	8511	851147
			410	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	405	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • C5 • LF • Site Code GHSC0001	**BN00-101**	MISSILE LAUNCH FACILITY	501	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	506	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	503	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	507	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	502	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	513	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	508	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	504	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	518	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	509	1-Jan-64	16-Dec-92	NREI	8511	851147
			510	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	505	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • C6 • LF • Site Code GHSD0001	**BN00-102**	MISSILE LAUNCH FACILITY	601	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	606	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	603	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	602	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	613	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	608	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	604	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	618	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	609	1-Jan-64	16-Dec-92	NREI	8511	851147
			610	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	605	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • C7 • LF • Site Code GHSE0001	**BN00-103**	MISSILE LAUNCH FACILITY	701	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	706	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	703	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	702	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	713	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	708	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	704	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	718	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	709	1-Jan-64	16-Dec-92	NREI	8511	851147
			710	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	705	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • C8 • LF • Site Code GHSF0001	**BN00-104**	MISSILE LAUNCH FACILITY	801	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	806	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	803	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	802	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	813	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	808	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	804	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	818	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	809	1-Jan-64	16-Dec-92	NREI	8511	851147
			810	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	805	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • C9 • LF		MISSILE LAUNCH FACILITY	901	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	906	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	903	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	902	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	913	1-Jan-64	16-Dec-92	NEV	8122	812926

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • C9 • LF • Site Code GHSG0001	BN00-105	SECURITY FENCE	908	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	904	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	918	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	909	1-Jan-64	16-Dec-92	NREI	8511	851147
			910	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	905	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • C10 • LF • Site Code GHSH0001	BN00-106	MISSILE LAUNCH FACILITY	1001	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1006	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1003	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1002	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1013	1-Jan-64	1-Jan-64	NEV	8122	812926
		SECURITY FENCE	1008	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1004	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	1009	1-Jan-64	16-Dec-92	NREI	8511	851147
			1010	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1005	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • C11 • LF • Site Code GHSJ0001	BN00-107	MISSILE LAUNCH FACILITY	1101	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1106	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1103	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1102	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1113	1-Jan-64	1-Jan-64	NEV	8122	812926
		SECURITY FENCE	1108	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1104	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	1109	1-Jan-64	16-Dec-92	NREI	8511	851147
			1110	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1105	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • D1 • MAF • Site Code GHSK0001	KM00-104	MISSILE OPERATIONS BUILDING	101	1-Jan-64	16-Dec-92	NREI	1457	141911
		BOUNDARY FENCE	111	1-Jan-64	16-Dec-92	NREI	8721	872245
		DIESEL STORAGE	105	1-Jan-64	16-Dec-92	NEV	1243	124234
			131	1-Jan-81	16-Dec-92	NEV		124134
			132	1-Jan-80	16-Dec-92	NEV		124137
			133	1-Jan-64	16-Dec-92	NEV		124134
			134	1-Jan-64	16-Dec-92	NEV		124234
		STORM DRAIN DISPOSAL	128	1-Jan-70	16-Dec-92	NEV	8321	871183
		DRIVEWAY	123	1-Jan-66	16-Dec-92	NREI	8511	851145
		EXTERIOR AREA LIGHTING	110	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	112	1-Jan-64	16-Dec-92	NREI	8722	872247
		FLAG POLE BASE	127	1-Jan-91	16-Dec-92	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	125	1-Jan-66	16-Dec-92	NREI	4425	214426
		GREASE TRAP	137	15-Jul-11	16-Dec-92	NREI	8314	831169
		HELICOPTER PAD	126	1-Jan-69	16-Dec-92	NREI	1112	116663
		PIPELINE, LIQUID FUEL	106	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	118	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	113	1-Jan-64	16-Dec-92		8511	851147
			115	1-Jan-64	16-Dec-92	NREI		851147
		VEHICLE PARKING NON ORGANIZATIONAL	114	1-Jan-64	16-Dec-92	NREI	8521	852262
		PRIMARY OVERHEAD DISTRIBUTION LINE	124	1-Jan-66	16-Dec-92	NEV	8121	812223
		RVA TOWER	130	10-Jul-95	16-Dec-92	NEV	1499	149968
		SANITARY SEWAGE MAIN	108	1-Jan-64	16-Dec-92	NREI	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	109	1-Jan-64	16-Dec-92	NREI	8123	812226
		SEWAGE SEPTIC TANK	120	1-Jan-81	16-Dec-92	NEV	8314	831169
		SEWAGE TREATMENT AND DISPOSAL	107	1-Jan-91	16-Dec-92	NREI	8315	831511
		SIDEWALK	3110	2-Sep-00	16-Dec-92	NREI	8524	852289
		SILO, HDANT HF	117	1-Jan-64	16-Dec-92	NEV	1321	132131
		WATER DISTRIBUTION MAIN	104	1-Jan-64	16-Dec-92	NREI	8421	842245
		WATER SUPPLY TREATMENT	103	1-Jan-64	1-Jan-64	NREI	8413	841427

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • D2 • LF • Site Code GHSL0001	**BN00-109**	MISSILE LAUNCH FACILITY	201	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	206	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	203	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	207	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	202	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	213	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	208	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	204	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	209	1-Jan-64	16-Dec-92	NREI	8511	851147
			210	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	205	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • D3 • LF • Site Code GHSM0001	**TBD**	MISSILE LAUNCH FACILITY	301	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	306	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	303	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	302	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	313	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	308	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	304	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	318	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	309	1-Jan-64	16-Dec-92	NREI	8511	851147
			310	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	305	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • D4 • LF • Site Code GHSN0001	**KM00-105**	MISSILE LAUNCH FACILITY	401	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	406	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	403	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	402	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	413	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	408	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	404	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	418	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	409	1-Jan-64	16-Dec-92	NREI	8511	851147
			410	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	405	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • D5 • LF • Site Code GHSP0001	**KM00-106**	MISSILE LAUNCH FACILITY	501	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	506	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	503	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	502	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	513	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	508	1-Jan-64	16-Dec-92	NEV	8722	872247
		PIPELINE, LIQUID FUEL	504	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	509	1-Jan-64	16-Dec-92	NREI	8511	851147
			510	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	505	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • D6 • LF • Site Code GHSQ0001	**KM00-107**	MISSILE LAUNCH FACILITY	601	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	606	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	603	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	602	1-Jan-54	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	613	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	608	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	604	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	618	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	609	1-Jan-64	16-Dec-92	NREI	8511	851147
			610	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	605	1-Jan-64	16-Dec-92	NEV	8123	812226
		MISSILE LAUNCH FACILITY	701	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	706	1-Jan-64	17-Oct-00	NEV	8932	890181

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • D7 • LF • Site Code GHSR0001	**KM00-108**	DIESEL STORAGE	703	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	702	1-Jan-54	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	713	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	708	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	704	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	709	1-Jan-64	16-Dec-92	NREI	8511	851147
			710	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	705	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • D8 • LF • Site Code GHSS0001	**KM00-109**	MISSILE LAUNCH FACILITY	801	1-Jan-64	17-Oct-00	NREI	1451	149512
		DIESEL STORAGE	803	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	802	1-Jan-54	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	813	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	808	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	804	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	809	1-Jan-64	16-Dec-92	NREI	8511	851147
			810	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	805	1-Jan-64	16-Dec-92	NEV	8123	812226
		UTILITY LINE DUCTS	806	1-Jan-64	16-Dec-92	NEV	8932	890181
F.E. Warren AFB • D9 • LF • Site Code GHST0001	**KM00-110**	MISSILE LAUNCH FACILITY	901	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	906	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	903	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	902	1-Jan-54	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	913	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	908	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	904	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	918	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	909	1-Jan-64	16-Dec-92	NREI	8511	851147
			910	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	905	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • D10 • LF • Site Code GHSU0001	**KM00-111**	MISSILE LAUNCH FACILITY	1001	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1006	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1003	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1002	1-Jan-54	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1013	1-Jan-64	1-Jan-64	NEV	8122	812926
		SECURITY FENCE	1008	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1004	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	1009	1-Jan-64	16-Dec-92	NREI	8511	851147
			1010	1-Jan-64	16-Dec-92	NREI		851147
			1011	1-Jan-63	16-Dec-92	NEV		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1005	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • D11 • LF • Site Code GHSV0001	**KM00-112**	MISSILE LAUNCH FACILITY	1101	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1106	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1103	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1102	1-Jan-54	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1113	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	1108	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1104	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	1109	1-Jan-64	16-Dec-92	NREI	8511	851147
			1110	1-Jan-64	16-Dec-92	NEV		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1105	1-Jan-64	16-Dec-92	NEV	8123	812226
		MISSILE OPERATIONS BUILDING	101	1-Jan-64	16-Dec-92	NREI	1457	141911
		BOUNDARY FENCE	111	1-Jan-64	16-Dec-92	NREI	8721	872245
		DIESEL STORAGE	105	1-Jan-92	16-Dec-92	NEV	1243	124234
			131	1-Jan-81	16-Dec-92	NEV		124134
			132	1-Jan-80	16-Dec-92	NEV		124137
			133	1-Jan-64	16-Dec-92	NEV		124134

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • E1 • MAF • Site Code GHSW0001	KM00-114		134	1-Jan-64	16-Dec-92	NEV		124234
		DRIVEWAY	123	1-Jan-66	16-Dec-92	NREI	8511	851145
		EXTERIOR AREA LIGHTING	110	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	112	1-Jan-64	16-Dec-92	NREI	8722	872247
		FLAG POLE BASE	127	1-Jan-91	16-Dec-92	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	125	1-Jan-66	16-Dec-92	NREI	4425	214426
		GREASE TRAP	137	15-Jul-11	16-Dec-92	NREI	8314	831169
		HELICOPTER PAD	126	1-Jan-69	16-Dec-92	NREI	1112	116663
		PIPELINE, LIQUID FUEL	106	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	119	28-Jul-11	16-Dec-92	NEV	8414	841166
		ROAD	113	1-Jan-64	16-Dec-92	NREI	8511	851147
			115	1-Jan-64	16-Dec-92	NREI		851147
		VEHICLE PARKING NON ORGANIZATIONAL	114	1-Jan-64	16-Dec-92	NREI	8521	852262
		PRIMARY OVERHEAD DISTRIBUTION LINE	124	1-Jan-66	16-Dec-92	NEV	8121	812223
		RVA TOWER	129	1-Jan-66	16-Dec-92	NEV	1321	132134
		SANITARY SEWAGE MAIN	108	1-Jan-64	16-Dec-92	NEV	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	109	1-Jan-64	16-Dec-92	NEV	8123	812226
		SEWAGE SEPTIC TANK	120	1-Jan-81	16-Dec-92	NEV	8314	831169
		SEWAGE TREATMENT AND DISPOSAL	107	1-Jan-91	16-Dec-92	NEV	8315	831511
		SIDEWALK	3110	19-Oct-98	16-Dec-92	NEV	8524	852289
		SILO, HDANT HF	117	1-Jan-64	16-Dec-92	NEV	1321	132131
		WATER DISTRIBUTION MAIN	104	1-Jan-92	16-Dec-92	NEV	8421	842245
		WATER TANK	103	1-Jan-92	1-Jan-92	NEV	8413	841427
F.E. Warren AFB • E2 • LF • Site Code GHSX0001	KM00-114	MISSILE LAUNCH FACILITY	201	1-Jan-92	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	206	1-Jan-92	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	203	1-Jan-92	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	207	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	202	1-Jan-54	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	213	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	208	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	204	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	209	1-Jan-64	16-Dec-92	NREI	8511	851147
			210	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	205	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • E3 • LF • Site Code GHSY0001	KM00-115	MISSILE LAUNCH FACILITY	301	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	306	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	303	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	302	1-Jan-54	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	313	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	308	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	304	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	318	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	309	1-Jan-64	16-Dec-92	NREI	8511	851147
			310	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	305	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • E4 • LF • Site Code GHSZ0001	KM00-116	MISSILE LAUNCH FACILITY	401	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	406	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	403	1-Jan-64	1-Jan-64	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	402	1-Jan-54	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	413	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	408	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	404	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	418	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	409	1-Jan-64	16-Dec-92	NREI	8511	851147
			410	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	405	1-Jan-64	16-Dec-92	NEV	8123	812226

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • E5 • LF • Site Code GHTA0001	KM00-117	MISSILE LAUNCH FACILITY	501	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	506	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	503	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	502	1-Jan-54	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	513	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	508	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	504	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	509	1-Jan-64	16-Dec-92	NREI	8511	851147
			510	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	505	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • E6 • LF • Site Code GHTB0001	KM00-118	MISSILE LAUNCH FACILITY	601	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	606	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	603	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	602	1-Jan-54	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	613	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	608	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	604	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	618	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	609	1-Jan-64	16-Dec-92	NREI	8511	851147
			610	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	605	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • E7 • LF • Site Code GHTC0001	KM00-119	MISSILE LAUNCH FACILITY	701	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	706	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	703	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	702	1-Jan-54	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	713	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	708	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	704	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	718	1-Jan-64	16-Dec-92	NEV	8414	841166
		ROAD	709	1-Jan-64	16-Dec-92	NREI	8511	851147
			710	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	705	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • E8 • LF • Site Code GHTD0001	48LA1994	MISSILE LAUNCH FACILITY	801	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	806	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	803	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	802	1-Jan-54	9-Jan-01	NREI	8910	811149
		EXTERIOR AREA LIGHTING	813	1-Jan-64	9-Jan-01	NEV	8122	812926
		SECURITY FENCE	808	1-Jan-64	9-Jan-01	NREI	8722	872247
		PIPELINE, LIQUID FUEL	804	1-Jan-64	9-Jan-01	NEV	1251	125553
		WATER WELL	818	1-Jan-64	9-Jan-01	NEV	8414	841166
		ROAD	809	1-Jan-64	9-Jan-01	NREI	8511	851147
			810	1-Jan-64	9-Jan-01	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	805	1-Jan-64	9-Jan-01	NEV	8123	812226
F.E. Warren AFB • E9 • LF • Site Code GHTE0001	48LA1995	MISSILE LAUNCH FACILITY	901	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	906	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	903	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	902	1-Jan-54	9-Jan-01	NREI	8910	811149
		EXTERIOR AREA LIGHTING	913	1-Jan-64	9-Jan-01	NEV	8122	812926
		SECURITY FENCE	908	1-Jan-64	9-Jan-01	NREI	8722	872247
		PIPELINE, LIQUID FUEL	904	1-Jan-64	9-Jan-01	NEV	1251	125553
		WATER WELL	918	1-Jan-64	9-Jan-01	NEV	8414	841166
		ROAD	909	1-Jan-64	9-Jan-01	NREI	8511	851147
			910	1-Jan-64	9-Jan-01	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	905	1-Jan-64	9-Jan-01	NEV	8123	812226
		MISSILE LAUNCH FACILITY	1001	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1006	1-Jan-64	17-Oct-00	NEV	8932	890181

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • E10 • LF • Site Code GHTF0001	48LA1997	DIESEL STORAGE	1003	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1002	1-Jan-54	9-Jan-01	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1013	1-Jan-64	1-Jan-64	NEV	8122	812926
		SECURITY FENCE	1008	1-Jan-64	9-Jan-01	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1004	1-Jan-64	9-Jan-01	NEV	1251	125553
		WATER WELL	1018	1-Jan-64	9-Jan-01	NEV	8414	841166
		ROAD	1009	1-Jan-64	9-Jan-01	NREI	8511	851147
			1010	1-Jan-64	9-Jan-01	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1005	1-Jan-64	9-Jan-01	NEV	8123	812226
F.E. Warren AFB • E11 • LF • Site Code GHTG0001	48LA1998	MISSILE LAUNCH FACILITY	1101	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1106	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1103	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1102	1-Jan-64	9-Jan-01	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1113	1-Jan-64	9-Jan-01	NEV	8122	812926
		SECURITY FENCE	1108	1-Jan-64	9-Jan-01	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1104	1-Jan-64	9-Jan-01	NEV	1251	125553
		WATER WELL	1118	1-Jan-64	9-Jan-01	NEV	8414	841166
		ROAD	1109	1-Jan-64	9-Jan-01	NREI	8511	851147
			1110	1-Jan-64	9-Jan-01	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1105	1-Jan-64	9-Jan-01	NEV	8123	812226
F.E. Warren AFB • F1 • MAF • Site Code GHTH0001	KM00-120	MISSILE OPERATIONS BUILDING	101	1-Jan-64	16-Dec-92	NREI	1457	141911
		BOUNDARY FENCE	111	1-Jan-64	16-Dec-92	NREI	8721	872245
		DIESEL STORAGE	105	1-Jan-92	16-Dec-92	NEV	1243	124234
			131	1-Jan-81	16-Dec-92	NEV		124134
			132	1-Jan-80	16-Dec-92	NEV		124137
			133	1-Jan-64	16-Dec-92	NEV		124134
			134	1-Jan-64	16-Dec-92	NEV		124234
		STORM DRAIN DISPOSAL	128	1-Jan-70	16-Dec-92	NEV	8321	871183
		DRIVEWAY	123	1-Jan-66	16-Dec-92	NREI	8511	851145
		EXTERIOR AREA LIGHTING	110	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	112	1-Jan-64	16-Dec-92	NREI	8722	872247
		FLAG POLE BASE	127	1-Jan-91	16-Dec-92	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	125	1-Jan-66	16-Dec-92	NREI	4425	214426
		GREASE TRAP	137	15-Jul-11	16-Dec-92	NREI	8314	831169
		HELICOPTER PAD	126	1-Jan-69	16-Dec-92	NREI	1112	116663
		PIPELINE, LIQUID FUEL	106	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	119	28-Jul-11	16-Dec-92	NEV	8414	841166
		ROAD	113	1-Jan-64	16-Dec-92	NREI	8511	851147
			115	1-Jan-64	16-Dec-92	NREI		851147
		VEHICLE PARKING NON ORGANIZATIONAL	114	1-Jan-64	16-Dec-92	NREI	8521	852262
		PRIMARY OVERHEAD DISTRIBUTION LINE	124	1-Jan-66	16-Dec-92	NEV	8121	812223
		RVA TOWER	129	1-Jan-66	16-Dec-92	NEV	1321	132134
		SANITARY SEWAGE MAIN	108	1-Jan-64	16-Dec-92	NEV	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	109	1-Jan-64	16-Dec-92	NEV	8123	812226
		SEWAGE SEPTIC TANK	120	1-Jan-81	16-Dec-92	NEV	8314	831169
		SEWAGE TREATMENT AND DISPOSAL	107	1-Jan-91	16-Dec-92	NEV	8315	831511
		SIDEWALK	3110	26-Feb-99	16-Dec-92	NEV	8524	852289
		SILO, HDANT HF	117	1-Jan-64	16-Dec-92	NEV	1321	132131
		WATER DISTRIBUTION MAIN	104	1-Jan-64	16-Dec-92	NEV	8421	842245
		WATER TANK	103	1-Jan-64	1-Jan-64	NEV	8413	841427
F.E. Warren AFB • F2 • LF • Site Code GHTJ0001	BN00-110	MISSILE LAUNCH FACILITY	201	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	206	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	203	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	202	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	213	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	208	1-Jan-64	16-Dec-92	NREI	8722	872247

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • F2 • LF • Site Code GHTJ0001		PIPELINE, LIQUID FUEL	204	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	209	1-Jan-64	16-Dec-92	NREI	8511	851147
			210	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	205	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • F3 • LF • Site Code GHTK0001	**CN00-128**	MISSILE LAUNCH FACILITY	301	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	306	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	303	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	307	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	302	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	313	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	308	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	304	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	309	1-Jan-64	16-Dec-92	NREI	8511	851147
			310	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	305	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • F4 • LF • Site Code GHTL0001	**CN00-232**	MISSILE LAUNCH FACILITY	401	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	406	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	403	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	402	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	413	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	408	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	404	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	409	1-Jan-64	16-Dec-92	NREI	8511	851147
			410	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	405	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • F5 • LF • Site Code GHTM0001	**CN00-155**	MISSILE LAUNCH FACILITY	501	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	506	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	503	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	502	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	513	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	508	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	504	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	509	1-Jan-64	16-Dec-92	NREI	8511	851147
			510	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	505	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • F6 • LF • Site Code GHTN0001	**KM00-121**	MISSILE LAUNCH FACILITY	601	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	606	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	603	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	602	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	613	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	608	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	604	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	609	1-Jan-64	16-Dec-92	NREI	8511	851147
			610	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	605	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • F7 • LF • Site Code GHTP0001	**CN00-211**	MISSILE LAUNCH FACILITY	701	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	706	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	703	1-Jan-64	17-Oct-00		1243	124234
		ELECTRIC POWER STATION BUILDING	702	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	713	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	708	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	704	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	709	1-Jan-64	16-Dec-92	NREI	8511	851147
			710	1-Jan-64	16-Dec-92			851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	705	1-Jan-64	16-Dec-92	NEV	8123	812226
		MISSILE LAUNCH FACILITY	801	1-Jan-64	17-Oct-00	NREI	1451	149512

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • F8 • LF • Site Code GHTQ0001	KM00-122	UTILITY LINE DUCTS	806	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	803	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	802	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	813	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	808	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	804	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	809	1-Jan-64	16-Dec-92	NREI	8511	851147
			810	1-Jan-64	16-Dec-92	NEV		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	805	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • F9 • LF • Site Code GHTR0001	KM00-123	MISSILE LAUNCH FACILITY	901	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	906	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	903	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	902	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	913	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	908	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	904	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	909	1-Jan-64	16-Dec-92	NREI	8511	851147
			910	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	905	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • F10 • LF • Site Code GHTS0001	KM00-124	MISSILE LAUNCH FACILITY	1001	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1006	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1003	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	1007	1-Jan-64	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	1002	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1013	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	1008	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1004	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	1009	1-Jan-64	16-Dec-92	NREI	8511	851147
			1010	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1005	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • F11 • LF • Site Code GHTT0001	BN00-111	MISSILE LAUNCH FACILITY	1101	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1106	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1103	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1102	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1113	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	1108	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1104	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	1109	1-Jan-64	16-Dec-92	NREI	8511	851147
			1110	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1105	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • G1 • MAF • Site Code GHTU0001	CN00-046-002	ANTENNA SUPPORT STRUCTURE	136	1-Jan-93	16-Dec-92	NEV	1321	132134
		MISSILE OPERATIONS BUILDING	101	1-Jan-64	16-Dec-92	NREI	1457	141911
		RADIO RELAY FACILITY	140	30-Nov-09	16-Dec-92	NEV	1311	131118
		DIESEL STORAGE	105	1-Jan-64	16-Dec-92	NEV	1243	124234
			131	1-Jan-81	16-Dec-92	NEV		124134
			132	1-Jan-80	16-Dec-92	NEV		124137
			133	1-Jan-64	16-Dec-92	NEV		124134
		DRIVEWAY	123	1-Jan-66	16-Dec-92	NREI	8511	851145
		EXTERIOR AREA LIGHTING	110	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	112	1-Jan-64	16-Dec-92	NREI	8722	872247
		FLAG POLE BASE	127	1-Jan-91	16-Dec-92	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	125	1-Jan-66	16-Dec-92	NREI	4425	214426
		GAS MAINS	119	1-Jan-64	16-Dec-92	NEV	8241	824464
		GREASE TRAP	137	15-Jul-11	16-Dec-92	NREI	8314	831169
		HELICOPTER PAD	126	1-Jan-69	16-Dec-92	NREI	1112	116663
		PIPELINE, LIQUID FUEL	106	1-Jan-64	16-Dec-92	NEV	1251	125553

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • G1 • MAF • Site Code GHTU0001		WATER WELL	1116	20-Aug-00	16-Dec-92	NEV	8414	841166
			116	1-Jan-64	16-Dec-92	NEV		841166
		ROAD	113	1-Jan-64	16-Dec-92	NREI	8511	851147
			115	1-Jan-64	16-Dec-92	NREI		851147
		VEHICLE PARKING NON ORGANIZATIONAL	114	1-Jan-64	16-Dec-92	NREI	8521	852262
		PRIMARY OVERHEAD DISTRIBUTION LINE	124	1-Jan-64	16-Dec-92	NEV	8121	812223
		SANITARY SEWAGE MAIN	108	1-Jan-64	16-Dec-92	NEV	8321	832266
			122	1-Jan-64	16-Dec-92	NEV		832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	121	1-Jan-64	16-Dec-92	NEV	8123	812226
		SECONDARY DISTRIBUTION LINE OVERHEAD	109	1-Jan-64	16-Dec-92	NEV	8121	812224
		SIDEWALK	3110	30-Jul-97	16-Dec-92	NEV	8524	852289
		SILO, HDANT HF	117	1-Jan-64	16-Dec-92	NEV	1321	132131
		WATER DISTRIBUTION MAIN	104	1-Jan-91	16-Dec-92	NEV	8421	842245
			118	1-Jan-64	16-Dec-92	NEV		842245
F.E. Warren AFB • G2 • LF • Site Code GHTV0001	CN00-046-003	MISSILE LAUNCH FACILITY	201	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	206	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	203	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	202	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	213	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	208	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	204	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	209	1-Jan-64	16-Dec-92	NREI	8511	851147
			210	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	205	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • G3 • LF • Site Code GHTW0001	CN00-279	MISSILE LAUNCH FACILITY	301	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	306	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	303	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	302	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	313	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	308	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	304	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	309	1-Jan-64	16-Dec-92	NREI	8511	851147
			310	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	305	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • G4 • LF • Site Code GHTX0001	CN00-046-004	MISSILE LAUNCH FACILITY	401	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	406	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	403	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	402	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	413	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	408	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	404	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	409	1-Jan-64	16-Dec-92	NREI	8511	851147
			410	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	405	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • G5 • LF • Site Code GHTY0001	CN00-046-005	MISSILE LAUNCH FACILITY	501	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	506	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	503	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	502	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	513	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	508	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	504	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	509	1-Jan-64	16-Dec-92	NREI	8511	851147
			510	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	514	1-Jan-64	16-Dec-92	NEV	8123	812226
		SECONDARY DISTRIBUTION LINE OVERHEAD	505	1-Jan-64	16-Dec-92	NEV	8121	812224
		MISSILE LAUNCH FACILITY	601	1-Jan-64	17-Oct-00	NREI	1451	149512

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • G6 • LF • Site Code GHTZ0001	CN00-115	UTILITY LINE DUCTS	606	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	603	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	602	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	613	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	608	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	604	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	609	1-Jan-64	16-Dec-92	NREI	8511	851147
			610	1-Jan-64	16-Dec-92	NEV		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	605	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • G7 • LF • Site Code GHUA0001	CN00-282	MISSILE LAUNCH FACILITY	701	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	706	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	703	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	411	1-Jan-64	17-Oct-00	NEV	8910	811149
			702	1-Jan-65	16-Dec-92	NREI		811149
		EXTERIOR AREA LIGHTING	713	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	708	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	704	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	709	1-Jan-64	16-Dec-92	NREI	8511	851147
			710	1-Jan-64	16-Dec-92	NEV		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	705	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • G8 • LF • Site Code GHUB0001	CN00-365	MISSILE LAUNCH FACILITY	801	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	806	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	803	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	802	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	813	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	808	1-Jan-64	16-Dec-92	NEV	8722	872247
		PIPELINE, LIQUID FUEL	804	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	809	1-Jan-64	16-Dec-92	NREI	8511	851147
			810	1-Jan-64	16-Dec-92	NEV		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	805	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • G9 • LF • Site Code GHUC0001	CN00-206	MISSILE LAUNCH FACILITY	901	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	906	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	903	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	902	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	913	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	908	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	904	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	909	1-Jan-64	16-Dec-92	NREI	8511	851147
			910	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	905	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • G10 • LF • Site Code GHUD0001	CN00-366	MISSILE LAUNCH FACILITY	1001	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1006	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1003	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1002	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1013	1-Jan-64	1-Jan-64	NEV	8122	812926
		SECURITY FENCE	1008	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1004	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	1009	1-Jan-64	16-Dec-92	NREI	8511	851147
			1010	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1005	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • G11 • LF • Site Code GHUE0001	CN00-270	MISSILE LAUNCH FACILITY	1101	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1106	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1103	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1102	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1113	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	1108	1-Jan-64	16-Dec-92	NREI	8722	872247

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
		PIPELINE, LIQUID FUEL	1104	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	1109	1-Jan-64	16-Dec-92	NREI	8511	851147
			1110	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1105	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • H1 • MAF • Site Code GHUF0001	**CN00-333**	MISSILE OPERATIONS BUILDING	101	1-Jan-64	16-Dec-92	NREI	1457	141911
		BOUNDARY FENCE	111	1-Jan-64	16-Dec-92	NREI	8721	872245
		DIESEL STORAGE	105	1-Jan-92	16-Dec-92	NEV	1243	124234
			131	1-Jan-81	16-Dec-92	NEV		124137
			132	1-Jan-80	16-Dec-92	NEV		124137
			133	1-Jan-64	16-Dec-92	NEV		124134
			134	1-Jan-64	16-Dec-92	NEV		124234
		STORM DRAIN DISPOSAL	128	1-Jan-70	16-Dec-92	NEV	8321	871183
		DRIVEWAY	123	1-Jan-66	16-Dec-92	NEV	8511	851145
		EXTERIOR AREA LIGHTING	110	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	112	1-Jan-64	16-Dec-92	NREI	8722	872247
		FLAG POLE BASE	127	1-Jan-91	16-Dec-92	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	125	1-Jan-66	16-Dec-92	NREI	4425	214426
		GREASE TRAP	137	15-Jul-11	16-Dec-92	NREI	8314	831169
		HELICOPTER PAD	126	1-Jan-69	16-Dec-92	NREI	1112	116663
		PIPELINE, LIQUID FUEL	106	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	119	28-Jul-11	16-Dec-92	NEV	8414	841166
		ROAD	113	1-Jan-64	16-Dec-92	NREI	8511	851147
			115	1-Jan-64	16-Dec-92	NREI		851147
		VEHICLE PARKING NON ORGANIZATIONAL	114	1-Jan-64	16-Dec-92	NREI	8521	852262
		PRIMARY OVERHEAD DISTRIBUTION LINE	124	1-Jan-66	16-Dec-92	NEV	8121	812223
		RVA TOWER	129	(blank)	16-Dec-92	NEV	1321	132134
		SANITARY SEWAGE MAIN	108	1-Jan-64	16-Dec-92	NEV	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	109	1-Jan-64	16-Dec-92	NEV	8123	812226
		SEWAGE SEPTIC TANK	120	1-Jan-81	16-Dec-92	NEV	8311	831165
		SEWAGE TREATMENT AND DISPOSAL	107	1-Jan-91	16-Dec-92	NEV	8315	831511
		SIDEWALK	3110	29-Dec-97	16-Dec-92	NEV	8524	852289
		SILO, HDANT HF	117	1-Jan-64	16-Dec-92	NEV	1321	132131
		WATER DISTRIBUTION MAIN	104	1-Jan-92	16-Dec-92	NEV	8421	842245
		WATER TANK	103	1-Jan-64	16-Dec-92	NEV	8413	841427
F.E. Warren AFB • H2 • LF • Site Code GHUG0001	**CN00-367**	MISSILE LAUNCH FACILITY	201	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	206	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	203	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	202	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	213	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	208	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	204	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	209	1-Jan-64	16-Dec-92	NREI	8511	851147
			210	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	205	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • H3 • LF • Site Code GHUH0001	**CN00-307**	MISSILE LAUNCH FACILITY	301	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	306	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	303	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	302	1-Jan-65	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	313	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	308	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	304	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	309	1-Jan-64	16-Dec-92	NREI	8511	851147
			310	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	305	1-Jan-64	16-Dec-92	NEV	8123	812226
		MISSILE LAUNCH FACILITY	401	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	406	1-Jan-64	17-Oct-00	NEV	8932	890181

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • H4 • LF • Site Code GHUJ0001	**CN00-342**	DIESEL STORAGE	403	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	402	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	413	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	408	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	404	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	409	1-Jan-64	16-Dec-92	NREI	8511	851147
			410	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	405	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • H5 • LF • Site Code GHUK0001	**CN00-299**	MISSILE LAUNCH FACILITY	501	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	506	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	503	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	502	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	513	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	508	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	504	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	509	1-Jan-64	16-Dec-92	NREI	8511	851147
			510	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	505	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • H6 • LF • Site Code GHUL0001	**CN00-301**	MISSILE LAUNCH FACILITY	601	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	606	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	603	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	607	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	702	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	613	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	608	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	604	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	609	1-Jan-64	16-Dec-92	NREI	8511	851147
			610	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	605	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • H7 • LF • Site Code GHUM0001	**CN00-180**	MISSILE LAUNCH FACILITY	701	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	706	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	703	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	602	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	713	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	708	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	704	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	709	1-Jan-64	16-Dec-92	NREI	8511	851147
			710	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	705	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • H8 • LF • Site Code GHUN0001	**CN00-114**	MISSILE LAUNCH FACILITY	801	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	806	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	803	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	807	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	802	1-Jan-65	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	813	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	808	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	804	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	809	1-Jan-64	16-Dec-92	NREI	8511	851147
			810	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	805	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • H9 • LF • Site Code GHUP0001	**CN00-326**	MISSILE LAUNCH FACILITY	901	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	906	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	903	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	907	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	902	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	913	1-Jan-64	16-Dec-92	NEV	8122	812926

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • H9 • LF • Site Code GHUP0001		SECURITY FENCE	908	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	904	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	909	1-Jan-64	16-Dec-92	NREI	8511	851147
			910	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	905	1-Jan-64	1-Jan-64	NEV	8123	812226
F.E. Warren AFB • H10 • LF • Site Code GHUQ0001	**CN00-368**	MISSILE LAUNCH FACILITY	1001	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1006	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1003	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1002	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1013	1-Jan-64	1-Jan-64	NEV	8122	812926
		SECURITY FENCE	1008	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1004	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	1009	1-Jan-64	16-Dec-92	NREI	8511	851147
			1010	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1005	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • H11 • LF • Site Code GHUR0001	**CN00-321**	MISSILE LAUNCH FACILITY	1101	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1106	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1103	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	1107	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	1102	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1113	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	1108	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1104	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	1109	1-Jan-64	16-Dec-92	NREI	8511	851147
			1110	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1105	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • I1 • MAF • Site Code GHUS0001	**CN00-105**	MISSILE OPERATIONS BUILDING	101	1-Jan-64	16-Dec-92	NREI	1457	141911
		BOUNDARY FENCE	111	1-Jan-64	16-Dec-92	NREI	8721	872245
		DIESEL STORAGE	105	1-Jan-64	16-Dec-92	NEV	1243	124234
			131	1-Jan-81	16-Dec-92	NEV		124134
			132	1-Jan-80	16-Dec-92	NEV		124137
			133	1-Jan-64	16-Dec-92	NEV		124134
			134	1-Jan-64	16-Dec-92	NEV		124234
		STORM DRAIN DISPOSAL	128	1-Jan-70	16-Dec-92	NEV	8321	871183
		DRIVEWAY	123	1-Jan-66	16-Dec-92	NEV	8511	851145
		EXTERIOR AREA LIGHTING	110	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	112	1-Jan-64	16-Dec-92	NREI	8722	872247
		FLAG POLE BASE	127	1-Jan-91	16-Dec-92	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	125	1-Jan-66	16-Dec-92	NREI	4425	214426
		GREASE TRAP	137	15-Jul-11	16-Dec-92	NREI	8314	831169
		HELICOPTER PAD	126	1-Jan-69	16-Dec-92	NREI	1112	116663
		PIPELINE, LIQUID FUEL	106	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	119	28-Jul-11	16-Dec-92	NEV	8414	841166
		ROAD	113	1-Jan-64	16-Dec-92	NREI	8511	851147
			115	1-Jan-64	16-Dec-92	NREI		851147
		VEHICLE PARKING NON ORGANIZATIONAL	114	1-Jan-64	16-Dec-92	NREI	8521	852262
		PRIMARY OVERHEAD DISTRIBUTION LINE	124	1-Jan-66	16-Dec-92	NEV	8121	812223
		RVA TOWER	129	(blank)	16-Dec-92	NEV	1321	132134
		SANITARY SEWAGE MAIN	108	1-Jan-64	16-Dec-92	NEV	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	109	1-Jan-64	16-Dec-92	NEV	8123	812226
		SEWAGE SEPTIC TANK	120	1-Jan-81	16-Dec-92	NEV	8314	831169
		SEWAGE TREATMENT AND DISPOSAL	107	1-Jan-91	16-Dec-92	NEV	8315	831511
		SIDEWALK	3110	17-Jun-00	16-Dec-92	NEV	8524	852289
		SILO, HDANT HF	117	1-Jan-64	16-Dec-92	NEV	1321	132131
		WATER DISTRIBUTION MAIN	104	1-Jan-92	16-Dec-92	NEV	8421	842245
		WATER TANK	103	1-Jan-92	16-Dec-92	NEV	8413	841427

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • I2 • LF • Site Code GHUT0001	CN00-092	MISSILE LAUNCH FACILITY	201	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	206	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	203	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	202	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	213	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	208	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	204	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	209	1-Jan-64	16-Dec-92	NREI	8511	851147
			210	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	205	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • I3 • LF • Site Code GHUU0001	CN00-097	MISSILE LAUNCH FACILITY	301	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	306	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	303	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	302	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	313	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	308	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	304	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	309	1-Jan-64	16-Dec-92	NREI	8511	851147
			310	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	305	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • I4 • LF • Site Code GHUV0001	CN00-066	MISSILE LAUNCH FACILITY	401	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	406	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	403	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	407	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	402	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	413	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	408	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	404	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	409	1-Jan-64	16-Dec-92	NREI	8511	851147
			410	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	405	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • I5 • LF • Site Code GHUW0001	CN00-071	MISSILE LAUNCH FACILITY	501	1-Jan-64	17-Oct-00	NREI	1451	149512
		DIESEL STORAGE	503	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	507	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	502	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	513	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	508	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	504	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	509	1-Jan-64	16-Dec-92	NREI	8511	851147
			510	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	505	1-Jan-64	16-Dec-92	NEV	8123	812226
			506	1-Jan-64	16-Dec-92	NEV	8932	890181
F.E. Warren AFB • I6 • LF • Site Code GHUX0001	5LO324	MISSILE LAUNCH FACILITY	601	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	606	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	603	1-Jan-67	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	602	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	613	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	608	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	604	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	609	1-Jan-64	1-Apr-94	NREI	8511	851147
			610	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	605	1-Jan-64	1-Apr-94	NEV	8123	812226
		MISSILE LAUNCH FACILITY	701	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	706	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	703	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	702	1-Jan-67	1-Apr-94	NREI	8910	811149

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • I7 • LF • Site Code GHUY0001	5LO325	EXTERIOR AREA LIGHTING	713	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	708	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	704	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	709	1-Jan-64	1-Apr-94	NREI	8511	851147
			710	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	705	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • I8 • LF • Site Code GHUZ0001	5LO326	MISSILE LAUNCH FACILITY	801	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	806	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	803	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	802	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	813	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	808	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	804	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	809	1-Jan-64	1-Apr-94	NREI	8511	851147
			810	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	805	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • I9 • LF • Site Code GHVA0001	CN00-169	MISSILE LAUNCH FACILITY	901	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	906	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	903	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	902	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	913	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	908	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	904	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	909	1-Jan-64	16-Dec-92	NREI	8511	851147
			910	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	905	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • I10 • LF • Site Code GHVB0001	CN00-369	MISSILE LAUNCH FACILITY	1001	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1006	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1003	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1002	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1013	1-Jan-64	1-Jan-64	NEV	8122	812926
		SECURITY FENCE	1008	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1004	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	1009	1-Jan-64	16-Dec-92	NREI	8511	851147
			1010	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1005	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • I11 • LF • Site Code GHVC0001	CN00-109	MISSILE LAUNCH FACILITY	1101	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1106	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1103	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	1107	1-Jan-64	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	1102	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1113	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	1108	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1104	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	1109	1-Jan-64	16-Dec-92	NREI	8511	851147
			1110	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1105	1-Jan-64	16-Dec-92	NEV	8123	812226
		MISSILE OPERATIONS BUILDING	101	1-Jan-64	1-Apr-94	NREI	1457	141911
		BOUNDARY FENCE	111	1-Jan-64	1-Apr-94	NREI	8721	872245
		DIESEL STORAGE	105	1-Jan-64	1-Apr-94	NREI	1243	124234
			130	1-Jan-80	1-Apr-94	NREI		124134
			131	1-Jan-80	1-Apr-94	NREI		124137
			133	1-Jan-64	1-Apr-94	NEV		124134
			134	1-Jan-64	1-Apr-94	NEV		124234
		DRIVEWAY	123	1-Jan-66	1-Apr-94	NREI	8511	851145
		EXTERIOR AREA LIGHTING	110	1-Jan-64	1-Apr-94	NEV	8122	812926

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • J1 • MAF • Site Code GHVD0001	5LO327	SECURITY FENCE	112	1-Jan-64	1-Apr-94	NREI	8722	872247
		FLAG POLE BASE	127	1-Jan-91	1-Apr-94	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	125	1-Jan-66	1-Apr-94	NREI	4425	214426
		GREASE TRAP	137	15-Jul-11	1-Apr-94	NREI	8314	831169
		HELICOPTER PAD	126	1-Jan-69	1-Apr-94	NREI	1112	116663
		PIPELINE, LIQUID FUEL	106	1-Jan-64	1-Apr-94	NEV	1251	125553
		WATER WELL	118	1-Jan-64	1-Apr-94	NEV	8414	841166
		ROAD	113	1-Jan-64	1-Apr-94	NREI	8511	851147
			115	1-Jan-64	1-Apr-94	NREI		851147
		VEHICLE PARKING NON ORGANIZATIONAL	114	1-Jan-64	1-Apr-94	NREI	8521	852262
		PRIMARY OVERHEAD DISTRIBUTION LINE	124	1-Jan-66	1-Apr-94	NEV	8121	812223
		RVA TOWER	129	(blank)	1-Apr-94	NEV	1321	132134
		SANITARY SEWAGE MAIN	108	1-Jan-64	1-Apr-94	NEV	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	109	1-Jan-64	1-Apr-94	NEV	8123	812226
		SEWAGE SEPTIC TANK	120	1-Jan-81	1-Apr-94	NEV	8314	831169
			138	26-Aug-11	1-Apr-94	NEV	8311	831165
		SEWAGE TREATMENT AND DISPOSAL	107	1-Jan-91	1-Apr-94	NEV	8314	831169
		SIDEWALK	3110	30-Nov-99	1-Apr-94	NEV	8524	852289
		SILO, HDANT HF	117	1-Jan-64	1-Apr-94	NEV	1321	132131
		WATER DISTRIBUTION MAIN	104	1-Jan-92	1-Apr-94	NEV	8421	842245
		WATER TANK	103	1-Jan-92	1-Apr-94	NEV	8413	841427
F.E. Warren AFB • J2 • LF • Site Code GHVE0001	CN00-370	MISSILE LAUNCH FACILITY	201	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	206	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	203	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	202	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	213	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	208	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	204	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	209	1-Jan-64	16-Dec-92	NREI	8511	851147
			210	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	205	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • J3 • LF • Site Code GHVF0001	5LO328	MISSILE LAUNCH FACILITY	301	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	306	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	303	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	302	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	313	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	308	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	304	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	309	1-Jan-64	1-Apr-94	NREI	8511	851147
			310	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	305	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • J4 • LF • Site Code GHVG0001	5LO329	MISSILE LAUNCH FACILITY	401	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	406	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	403	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	402	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	413	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	408	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	404	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	409	1-Jan-64	1-Apr-94	NREI	8511	851147
			410	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	405	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • J5 • LF • Site Code GHVH0001	5LO330	MISSILE LAUNCH FACILITY	501	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	506	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	503	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	502	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	513	1-Jan-64	1-Apr-94	NEV	8122	812926

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
		SECURITY FENCE	508	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	504	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	509	1-Jan-64	1-Apr-94	NREI	8511	851147
			510	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	505	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • J6 • LF • Site Code GHVJ0001	**5LO331**	MISSILE LAUNCH FACILITY	601	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	606	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	603	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	607	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	602	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	613	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	608	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	604	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	609	1-Jan-64	1-Apr-94	NREI	8511	851147
			610	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	605	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • J7 • LF • Site Code GHVK0001	**5LO332**	MISSILE LAUNCH FACILITY	701	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	706	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	703	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	702	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	713	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	708	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	704	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	709	1-Jan-64	1-Apr-94	NREI	8511	851147
			710	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	705	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • J8 • LF • Site Code GHVL0001	**5LO333**	MISSILE LAUNCH FACILITY	801	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	806	1-Jan-64		NEV	8932	890181
		DIESEL STORAGE	803	1-Jan-64		NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	802	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	813	1-Jan-64		NEV	8122	812926
		SECURITY FENCE	808	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	804	1-Jan-64		NEV	1251	125553
		ROAD	809	1-Jan-64	1-Apr-94	NREI	8511	851147
			810	1-Jan-64				851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	805	1-Jan-64		NEV	8123	812226
F.E. Warren AFB • J9 • LF • Site Code GHVM0001	**CN00-217**	MISSILE LAUNCH FACILITY	901	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	906	1-Jan-64		NEV	8932	890181
		DIESEL STORAGE	903	1-Jan-64			1243	124234
		ELECTRIC POWER STATION BUILDING	902	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	913	1-Jan-64		NEV	8122	812926
		SECURITY FENCE	908	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	904	1-Jan-64		NEV	1251	125553
		ROAD	909	1-Jan-64	16-Dec-92	NREI	8511	851147
			910	1-Jan-64				851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	905	1-Jan-64	1-Jan-64	NEV	8123	812226
F.E. Warren AFB • J10 • LF • Site Code GHVN0001	**CN00-222**	MISSILE LAUNCH FACILITY	1001	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1006	1-Jan-64		NEV	8932	890181
		DIESEL STORAGE	1003	1-Jan-64			1243	124234
		ELECTRIC POWER STATION BUILDING	1002	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1013	1-Jan-64	1-Jan-64	NEV	8122	812926
		SECURITY FENCE	1008	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1004	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	1009	1-Jan-64	16-Dec-92	NREI	8511	851147
			1010	1-Jan-64	16-Dec-92			851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1005	1-Jan-64	16-Dec-92	NEV	8123	812226

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • J11 • LF • Site Code GHVP0001	CN00-287	MISSILE LAUNCH FACILITY	1101	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1106	1-Jan-64		NEV	8932	890181
		DIESEL STORAGE	1103	1-Jan-64			1243	124234
		ELECTRIC POWER STATION BUILDING	1102	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1113	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	1108	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1104	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	1109	1-Jan-64	16-Dec-92	NREI	8511	851147
			1110	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1105	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • K1 • MAF • Site Code GHVQ0001	KM00-125	MISSILE OPERATIONS BUILDING	101	1-Jan-64	16-Dec-92	NREI	1457	141911
		BOUNDARY FENCE	111	1-Jan-64	16-Dec-92	NREI	8721	872245
		DIESEL STORAGE	105	1-Jan-64	16-Dec-92	NEV	1243	124234
			131	1-Jan-64	16-Dec-92	NEV		124134
			132	1-Jan-80	16-Dec-92	NEV		124137
			133	1-Jan-64	16-Dec-92	NEV		124134
			134	1-Jan-64	16-Dec-92	NEV		124234
		STORM DRAIN DISPOSAL	128	1-Jan-70	16-Dec-92	NEV	8321	871183
		DRIVEWAY	123	1-Jan-66	16-Dec-92	NEV	8511	851145
		EXTERIOR AREA LIGHTING	110	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	112	1-Jan-64	16-Dec-92	NREI	8722	872247
		FLAG POLE BASE	127	1-Jan-91	16-Dec-92	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	125	1-Jan-66	16-Dec-92	NREI	4425	214426
		GREASE TRAP	137	15-Jul-11	16-Dec-92	NREI	8314	831169
		HELICOPTER PAD	126	1-Jan-69	16-Dec-92	NREI	1112	116663
		PIPELINE, LIQUID FUEL	106	1-Jan-64	16-Dec-92	NEV	1251	125553
		WATER WELL	118	1-Jan-64	16-Dec-92	NREI	8414	841166
		ROAD	113	1-Jan-64	16-Dec-92	NREI	8511	851147
			115	1-Jan-64	16-Dec-92	NREI		851147
		VEHICLE PARKING NON ORGANIZATIONAL	114	1-Jan-64	16-Dec-92	NREI	8521	852262
		PRIMARY OVERHEAD DISTRIBUTION LINE	124	1-Jan-66	16-Dec-92	NEV	8121	812223
		RVA TOWER	129	(blank)	16-Dec-92	NEV	1321	132134
		SANITARY SEWAGE MAIN	108	1-Jan-64	16-Dec-92	NEV	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	109	1-Jan-64	16-Dec-92	NEV	8123	812226
		SEWAGE TREATMENT AND DISPOSAL	107	1-Jan-91	16-Dec-92	NEV	8315	831511
		SIDEWALK	3110	28-Mar-00	16-Dec-92	NEV	8524	852289
		SILO, HDANT HF	117	1-Jan-64	16-Dec-92	NEV	1321	132131
		WATER DISTRIBUTION MAIN	104	1-Jan-91	16-Dec-92	NEV	8421	842245
		WATER TANK	103	1-Jan-91	16-Dec-92	NEV	8413	841427
F.E. Warren AFB • K2 • LF • Site Code GHVR0001	KM00-126	MISSILE LAUNCH FACILITY	201	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	206	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	203	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	202	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	213	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	208	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	204	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	209	1-Jan-64	16-Dec-92	NREI	8511	851147
			210	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	205	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • K3 • LF • Site Code GHVS0001	KM00-127	MISSILE LAUNCH FACILITY	301	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	306	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	303	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	302	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	313	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	308	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	304	1-Jan-64	16-Dec-92	NEV	1251	125553

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
		ROAD	309	1-Jan-64	16-Dec-92	NREI	8511	851147
			310	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	305	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • K4 • LF • Site Code GHVT0001	KM00-128	MISSILE LAUNCH FACILITY	401	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	406	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	403	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	402	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	413	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	408	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	404	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	409	1-Jan-64	16-Dec-92	NREI	8511	851147
			410	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	405	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • K5 • LF • Site Code GHVU0001	KM00-129	MISSILE LAUNCH FACILITY	501	1-Jan-64	17-Oct-00	NREI	1451	149512
		AREA LIGHTING	513	1-Jan-64	17-Oct-00	NEV	8122	812926
		UTILITY LINE DUCTS	506	1-Jan-64	17-Oct-00	NEV	8932	890181
		ELECTRIC POWER STATION BUILDING	502	1-Jan-64	16-Dec-92	NREI	8910	811149
		SECURITY FENCE	508	1-Jan-64	16-Dec-92	NREI	8722	872247
		FUEL PIPELINE	504	1-Jan-64	16-Dec-92	NEV	1251	125553
		FUEL STORAGE TANK	503	1-Jan-64	16-Dec-92	NEV	1243	124234
		ROAD	509	1-Jan-64	16-Dec-92	NREI	8511	851147
			510	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE	505	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • K6 • LF • Site Code GHVV0001	KM00-130	MISSILE LAUNCH FACILITY	601	1-Jan-64	17-Oct-00	NREI	1451	149512
		AREA LIGHTING	613	1-Jan-64	17-Oct-00	NEV	8122	812926
		UTILITY LINE DUCTS	606	1-Jan-64	17-Oct-00	NEV	8932	890181
		STORM DRAIN DISPOSAL	607	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	602	1-Jan-64	16-Dec-92	NREI	8910	811149
		SECURITY FENCE	608	1-Jan-64	16-Dec-92	NREI	8722	872247
		FUEL PIPELINE	604	1-Jan-64	16-Dec-92	NEV	1251	125553
		FUEL STORAGE TANK	603	1-Jan-64	16-Dec-92	NEV	1243	124234
		ROAD	609	1-Jan-64	16-Dec-92	NREI	8511	851147
			610	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE	605	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • K7 • LF • Site Code GHVW0001	KM00-131	MISSILE LAUNCH FACILITY	701	1-Jan-64	17-Oct-00	NREI	1451	149512
		AREA LIGHTING	713	1-Jan-64	17-Oct-00	NEV	8122	812926
		UTILITY LINE DUCTS	706	1-Jan-64	17-Oct-00	NEV	8932	890181
		ELECTRIC POWER STATION BUILDING	702	1-Jan-64	16-Dec-92	NREI	8910	811149
		SECURITY FENCE	708	1-Jan-64	16-Dec-92	NEV	8722	872247
		FUEL PIPELINE	704	1-Jan-64	16-Dec-92	NEV	1251	125553
		FUEL STORAGE TANK	703	1-Jan-64	16-Dec-92	NEV	1243	124234
		ROAD	709	1-Jan-64	16-Dec-92	NREI	8511	851147
			710	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE	705	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • K8 • LF • Site Code GHVX0001	KM00-132	MISSILE LAUNCH FACILITY	801	1-Jan-64	17-Oct-00	NREI	1451	149512
		AREA LIGHTING	813	1-Jan-64	17-Oct-00	NEV	8122	812926
		UTILITY LINE DUCTS	806	1-Jan-64	17-Oct-00	NEV	8932	890181
		ELECTRIC POWER STATION BUILDING	802	1-Jan-64	16-Dec-92	NREI	8910	811149
		SECURITY FENCE	808	1-Jan-64	16-Dec-92	NREI	8722	872247
		FUEL PIPELINE	804	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	809	1-Jan-64	16-Dec-92	NREI	8511	851147
			810	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE	805	1-Jan-64	16-Dec-92	NEV	8123	812226
		STORAGE TANK (FUEL)	803	1-Jan-64	16-Dec-92	NEV	1243	124234
		MISSILE LAUNCH FACILITY	901	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	906	1-Jan-64	17-Oct-00	NEV	8932	890181

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • K9 • LF • Site Code GHVY0001	**KM00-133**	ELECTRIC POWER STATION BUILDING	902	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	913	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	908	1-Jan-64	16-Dec-92	NREI	8722	872247
		FUEL STORAGE TANK	903	1-Jan-64	16-Dec-92	NEV	1243	124234
		PIPELINE, LIQUID FUEL	904	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	909	1-Jan-64	16-Dec-92	NREI	8511	851147
			910	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE	905	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • K10 • LF • Site Code GHVZ0001	**KM00-134**	MISSILE LAUNCH FACILITY	1001	1-Jan-64	17-Oct-00	NREI	1451	149512
		AREA LIGHTING	1013	1-Jan-64	1-Jan-64	NEV	8122	812926
		UTILITY LINE DUCTS	1006	1-Jan-64	1-Jan-64	NEV	8932	890181
		ELECTRIC POWER STATION BUILDING	1002	1-Jan-64	16-Dec-92	NREI	8910	811149
		SECURITY FENCE	1008	1-Jan-64	16-Dec-92	NREI	8722	872247
		FUEL STORAGE TANK	1003	1-Jan-64	16-Dec-92	NEV	1243	124234
		PIPELINE, LIQUID FUEL	1004	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	1009	1-Jan-64	16-Dec-92	NREI	8511	851147
			1010	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE	1005	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • K11 • LF • Site Code GHWA0001	**KM00-135**	MISSILE LAUNCH FACILITY	1101	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1106	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1103	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1102	1-Jan-64	16-Dec-92	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1113	1-Jan-64	16-Dec-92	NEV	8122	812926
		SECURITY FENCE	1108	1-Jan-64	16-Dec-92	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1104	1-Jan-64	16-Dec-92	NEV	1251	125553
		ROAD	1109	1-Jan-64	16-Dec-92	NREI	8511	851147
			1110	1-Jan-64	16-Dec-92	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1105	1-Jan-64	16-Dec-92	NEV	8123	812226
F.E. Warren AFB • L1 • MAF • Site Code GHWB0001	**5LO334**	MISSILE OPERATIONS BUILDING	101	1-Jan-64	1-Apr-94	NREI	1457	141911
		RADIO RELAY FACILITY	140	30-Nov-09	1-Apr-94	NEV	1311	131118
		BASE FLAG POLE	127	1-Jan-91	1-Apr-94	NEV	6900	690432
		BOUNDARY FENCE	111	1-Jan-64	1-Apr-94	NREI	8721	872245
		DIESEL STORAGE	105	1-Jan-92	1-Apr-94	NEV	1243	124234
			131	1-Jan-81	1-Apr-94	NEV	1243	124134
			132	1-Jan-80	1-Apr-94	NEV	1243	124137
			133	1-Jan-64	1-Apr-94	NEV	1243	124134
			134	1-Jan-64	1-Apr-94	NEV	1243	124234
		STORM DRAIN DISPOSAL	128	1-Jan-70	1-Apr-94	NEV	8321	871183
		DRIVEWAY	123	1-Jan-66	1-Apr-94	NREI	8511	851145
		EXTERIOR AREA LIGHTING	110	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	112	1-Jan-64	1-Apr-94	NREI	8722	872247
		VEHICLE OPERATIONS HEATED PARKING	125	1-Jan-66	1-Apr-94	NREI	4425	214426
		HELICOPTER PAD	126	1-Jan-69	1-Apr-94	NREI	1112	116663
		PIPELINE, LIQUID FUEL	106	1-Jan-64	1-Apr-94	NEV	1251	125553
		WATER WELL	119	1-Jan-96	1-Apr-94	NEV	8414	841166
			120	28-Jul-11	1-Apr-94	NEV	8414	841166
		ROAD	113	1-Jan-64	1-Apr-94	NREI	8511	851147
			115	1-Jan-64	1-Apr-94	NREI	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	114	1-Jan-64	1-Apr-94	NREI	8521	852262
		PRIMARY OVERHEAD DISTRIBUTION LINE	124	1-Jan-66	1-Apr-94	NEV	8121	812223
		RVA TOWER	129	1-Jan-92	1-Apr-94	NREI	1321	132134
		SANITARY SEWAGE MAIN	108	1-Jan-64	1-Apr-94	NEV	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	109	1-Jan-64	1-Apr-94	NEV	8123	812226
		SEWAGE TREATMENT AND DISPOSAL	107	1-Jan-91	1-Apr-94	NEV	8314	831169
		SIDEWALK	3110	25-Jun-99	1-Apr-94	NEV	8524	852289
		SILO, HDANT HF	117	1-Jan-64	1-Apr-94	NEV	1321	132131

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
		WATER DISTRIBUTION MAIN	104	1-Jan-64	1-Apr-94	NEV	8421	842245
		WATER TANK	103	1-Jan-64	1-Jan-64	NEV	8413	841427
F.E. Warren AFB • L2 • LF • Site Code GHWC0001	**5LO335**	MISSILE LAUNCH FACILITY	201	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	206	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	203	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	202	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	213	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	208	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	204	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	209	1-Jan-64	1-Apr-94	NREI	8511	851147
			210	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	205	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • L3 • LF • Site Code GHWD0001	**5LO336**	MISSILE LAUNCH FACILITY	301	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	306	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	303	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	307	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	302	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	313	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	308	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	304	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	309	1-Jan-64	1-Apr-94	NREI	8511	851147
			310	1-Jan-64	1-Apr-94	NREI		851147
			311	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	305	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • L4 • LF • Site Code GHWE0001	**5LO337**	MISSILE LAUNCH FACILITY	401	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	406	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	403	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	402	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	413	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	408	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	404	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	409	1-Jan-64	1-Apr-94	NREI	8511	851147
			410	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	405	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • L5 • LF • Site Code GHWF0001	**5LO338**	MISSILE LAUNCH FACILITY	501	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	506	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	503	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	502	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	513	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	508	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	504	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	509	1-Jan-64	1-Apr-94	NREI	8511	851147
			510	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	505	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • L6 • LF • Site Code GHWG0001	**5LO339**	MISSILE LAUNCH FACILITY	601	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	606	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	603	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	602	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	613	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	608	1-Jan-64	10-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	604	1-Jan-64	10-Apr-94	NEV	1251	125553
		ROAD	609	1-Jan-64	1-Apr-94	NREI	8511	851147
			610	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	605	1-Jan-64	1-Apr-94	NEV	8123	812226
		MISSILE LAUNCH FACILITY	701	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	706	1-Jan-64	17-Oct-00	NEV	8932	890181

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • L7 • LF • Site Code GHWH0001	**5LO340**	DIESEL STORAGE	703	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	702	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	713	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	708	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	704	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	709	1-Jan-64	1-Apr-94	NREI	8511	851147
			710	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	705	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • L8 • LF • Site Code GHWJ0001	**5LO341**	MISSILE LAUNCH FACILITY	801	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	806	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	803	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	802	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	813	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	808	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	804	1-Jan-64	1-Apr-94	NEV	1251	125553
		WATER WELL	819	1-Jan-69	1-Apr-94	NEV	8414	841166
		ROAD	809	1-Jan-64	1-Apr-94	NREI	8511	851147
			810	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	805	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • L9 • LF • Site Code GHWK0001	**5LO342**	MISSILE LAUNCH FACILITY	901	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	906	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	903	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	902	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	913	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	908	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	904	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	909	1-Jan-64	1-Apr-94	NREI	8511	851147
			910	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	905	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • L10 • LF • Site Code GHWL0001	**5LO343**	MISSILE LAUNCH FACILITY	1001	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1006	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1003	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1002	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1013	1-Jan-64	1-Jan-64	NEV	8122	812926
		SECURITY FENCE	1008	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1004	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	1009	1-Jan-64	1-Apr-94	NREI	8511	851147
			1010	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1005	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • L11 • LF • Site Code GHWM0001	**5LO344**	MISSILE LAUNCH FACILITY	1101	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1106	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1103	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1102	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1113	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	1108	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1104	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	1109	1-Jan-64	1-Apr-94	NREI	8511	851147
			1110	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1105	1-Jan-64	1-Apr-94	NEV	8123	812226
		MISSILE OPERATIONS BUILDING	101	1-Jan-64	1-Apr-94	NREI	1457	141911
		BASE FLAG POLE	127	1-Jan-91	1-Apr-94	NEV	6900	690432
		BOUNDARY FENCE	111	1-Jan-64	1-Apr-94	NREI	8721	872245
		DIESEL STORAGE	105	1-Jan-64	1-Apr-94	NEV	1243	124234
			130	1-Jan-80	1-Apr-94	NEV		124134
			131	1-Jan-80	1-Apr-94	NEV		124137
			133	1-Jan-64	1-Apr-94	NEV		124134

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • M1 • MAF • Site Code GHWN0001	5WL2146		134	1-Jan-64	1-Apr-94	NEV		124234
		STORM DRAIN DISPOSAL	128	1-Jan-70	1-Apr-94	NEV	8321	871183
		DRIVEWAY	123	1-Jan-66	1-Apr-94	NREI	8511	851145
		EXTERIOR AREA LIGHTING	110	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	112	1-Jan-64	1-Apr-94	NREI	8722	872247
		VEHICLE OPERATIONS HEATED PARKING	125	1-Jan-66	1-Apr-94	NREI	4425	214426
		GREASE TRAP	137	15-Jul-11	1-Apr-94	NREI	8314	831169
		HELICOPTER PAD	126	1-Jan-69	1-Apr-94	NREI	1112	116663
		PIPELINE, LIQUID FUEL	106	1-Jan-64	1-Apr-94	NEV	1251	125553
		WATER WELL	118	1-Jan-82	1-Apr-94	NEV	8414	841166
			119	8-May-98	1-Apr-94	NEV		841166
		ROAD	113	1-Jan-64	1-Apr-94	NREI	8511	851147
			115	1-Jan-64	1-Apr-94	NREI		851147
		VEHICLE PARKING NON ORGANIZATIONAL	114	1-Jan-64	1-Apr-94	NREI	8521	852262
		PRIMARY OVERHEAD DISTRIBUTION LINE	124	1-Jan-66	1-Apr-94	NEV	8121	812223
		RVA TOWER	129	(blank)	1-Apr-94	NEV	1321	132134
		SANITARY SEWAGE MAIN	108	1-Jan-64	1-Apr-94	NEV	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	109	1-Jan-64	1-Jan-64	NEV	8123	812226
		SEWAGE TREATMENT AND DISPOSAL	107	1-Jan-91	1-Jan-64	NEV	8314	831169
		SIDEWALK	3110	30-Jul-97	1-Jan-64	NEV	8524	852289
		SILO, HDANT HF	117	1-Jan-64	1-Jan-64	NEV	1321	132131
		WATER DISTRIBUTION MAIN	104	1-Jan-91	1-Jan-64	NEV	8421	842245
		WATER TANK	103	1-Jan-91	1-Jan-64	NEV	8413	841427
F.E. Warren AFB • M2 • LF • Site Code GHWP0001	5WL2147	MISSILE LAUNCH FACILITY	201	1-Jan-64	17-Oct-00	NEV	1451	149512
		UTILITY LINE DUCTS	206	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	203	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	207	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	202	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	213	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	208	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	204	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	209	1-Jan-64	1-Apr-94	NREI	8511	851147
			210	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	205	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • M3 • LF • Site Code GHWQ0001	5WL2148	MISSILE LAUNCH FACILITY	301	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	306	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	303	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	307	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	302	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	313	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	308	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	304	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	309	1-Jan-64	1-Apr-94	NREI	8511	851147
			310	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	305	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • M4 • LF • Site Code GHWR0001	5WL2149	MISSILE LAUNCH FACILITY	401	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	406	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	403	1-Jan-64	17-Oct-00	NEV	1243	124234
		DISTRIBUTION LINE	405	1-Jan-64	17-Oct-00	NEV	8123	812226
		ELECTRIC POWER STATION BUILDING	402	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	413	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	408	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	404	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	409	1-Jan-64	1-Apr-94	NREI	8511	851147
			410	1-Jan-64	1-Apr-94	NREI		851147
		MISSILE LAUNCH FACILITY	501	1-Jan-64	17-Oct-00	NREI	1451	149512

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • M5 • LF • Site Code GHWS0001	5WL2150	UTILITY LINE DUCTS	506	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	503	1-Jan-64	17-Oct-00	NEV	1243	124234
		DISTRIBUTION LINE	505	1-Jan-64	17-Oct-00	NEV	8123	812226
		STORM DRAIN DISPOSAL	507	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	502	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	513	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	508	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	504	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	509	1-Jan-64	1-Apr-94	NREI	8511	851147
			510	1-Jan-64	1-Apr-94	NREI		851147
F.E. Warren AFB • M6 • LF • Site Code GHWT0001	5WL2151	MISSILE LAUNCH FACILITY	601	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	606	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	603	1-Jan-64	17-Oct-00	NEV	1243	124234
		DISTRIBUTION LINE	605	1-Jan-64	17-Oct-00	NEV	8123	812226
		ELECTRIC POWER STATION BUILDING	602	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	613	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	608	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	604	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	609	1-Jan-64	1-Apr-94	NREI	8511	851147
			610	1-Jan-64	1-Apr-94	NREI		851147
F.E. Warren AFB • M7 • LF • Site Code GHWU0001	5WL2152	MISSILE LAUNCH FACILITY	701	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	706	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	703	1-Jan-64	17-Oct-00	NEV	1243	124234
		DISTRIBUTION LINE	705	1-Jan-64	17-Oct-00	NEV	8123	812226
		ELECTRIC POWER STATION BUILDING	702	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	713	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	708	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	704	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	709	1-Jan-64	1-Apr-94	NREI	8511	851147
			710	1-Jan-64	1-Apr-94	NREI		851147
F.E. Warren AFB • M8 • LF • Site Code GHWV0001	5WL2153	MISSILE LAUNCH FACILITY	801	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	806	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	803	1-Jan-64	17-Oct-00	NEV	1243	124234
		DISTRIBUTION LINE	805	1-Jan-64	17-Oct-00	NEV	8123	812226
		ELECTRIC POWER STATION BUILDING	802	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	813	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	808	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	804	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	809	1-Jan-64	1-Apr-94	NREI	8511	851147
			810	1-Jan-64	1-Apr-94	NREI		851147
F.E. Warren AFB • M9 • LF • Site Code GHWW0001	5WL2154	MISSILE LAUNCH FACILITY	901	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	906	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	903	1-Jan-64	17-Oct-00	NEV	1243	124234
		DISTRIBUTION LINE	905	1-Jan-64	17-Oct-00	NEV	8123	812226
		ELECTRIC POWER STATION BUILDING	902	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	913	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	908	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	904	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	909	1-Jan-64	1-Apr-94	NREI	8511	851147
			910	1-Jan-64	1-Apr-94	NREI		851147
F.E. Warren AFB • M10 • LF • Site Code GHWX0001	5WL2155	MISSILE LAUNCH FACILITY	1001	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1006	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1003	1-Jan-64	17-Oct-00	NEV	1243	124234
		DISTRIBUTION LINE	1005	1-Jan-64	17-Oct-00	NEV	8123	812226
		ELECTRIC POWER STATION BUILDING	1002	1-Jan-64	1-Apr-94	NREI	8910	811149
			311	1-Jan-65	1-Apr-94	NREI		811149

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
		EXTERIOR AREA LIGHTING	1013	1-Jan-64	1-Jan-64	NEV	8122	812926
		SECURITY FENCE	1008	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1004	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	1009	1-Jan-64	1-Apr-94	NREI	8511	851147
			1010	1-Jan-64	1-Apr-94	NREI		851147
F.E. Warren AFB • M11 • LF • Site Code GHWY0001	**5WL2156**	MISSILE LAUNCH FACILITY	1101	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1106	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1103	1-Jan-64	17-Oct-00	NEV	1243	124234
		DISTRIBUTION LINE	1105	1-Jan-64	17-Oct-00	NEV	8123	812226
		ELECTRIC POWER STATION BUILDING	1102	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1113	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	1108	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1104	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	1109	1-Jan-64	1-Apr-94	NREI	8511	851147
			1110	1-Jan-64	1-Apr-94	NREI		851147
F.E. Warren AFB • N1 • MAF • Site Code GHWZ0001	**5WL2157**	DIESEL STORAGE	105	1-Jan-64	1-Apr-94	NEV	1243	124234
			130	1-Jan-80	1-Apr-94	NEV		124134
			133	1-Jan-64	1-Apr-94	NEV		124134
			134	1-Jan-64	1-Apr-94	NEV		124234
		STORM DRAIN DISPOSAL	128	1-Jan-70	1-Apr-94	NEV	8321	871183
		DRIVEWAY	123	1-Jan-66	1-Apr-94	NREI	8511	851145
		EXTERIOR AREA LIGHTING	110	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	111	1-Jan-64	1-Apr-94	NREI	8721	872245
			112	1-Jan-64	1-Apr-94	NREI	8722	872247
		FLAG POLE BASE	127	1-Jan-91	1-Apr-94	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	125	1-Jan-66	1-Apr-94	NREI	4425	214426
		HELICOPTER PAD	126	1-Jan-69	1-Apr-94	NREI	1112	116663
		PIPELINE, LIQUID FUEL	106	1-Jan-64	1-Apr-94	NEV	1251	125553
		MOGAS Storage	131	1-Jan-80	1-Apr-94	NEV	1243	124137
		MISSILE OPERATIONS BUILDING	101	1-Jan-64	1-Apr-94	NREI	1457	141911
		WATER WELL	118	1-Jan-64	1-Apr-94	NEV	8414	841166
		ROAD	113	1-Jan-64	1-Apr-94	NREI	8511	851147
			115	1-Jan-64	1-Apr-94	NREI		851147
		VEHICLE PARKING NON ORGANIZATIONAL	114	1-Jan-64	1-Apr-94	NREI	8521	852262
		PRIMARY OVERHEAD DISTRIBUTION LINE	124	1-Jan-66	1-Apr-94	NEV	8121	812223
		RVA TOWER	129	(blank)	1-Apr-94	NEV	1321	132134
		SANITARY SEWAGE MAIN	108	1-Jan-64	1-Apr-94	NEV	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	109	1-Jan-64	1-Apr-94	NEV	8123	812226
		SEWAGE SEPTIC TANK	120	1-Jan-96	1-Apr-94	NEV	8314	831169
		SEWAGE TREATMENT AND DISPOSAL	107	1-Jan-91	1-Apr-94	NEV	8315	831511
		SIDEWALK	3110	16-Jul-97	1-Apr-94	NEV	8524	852289
		SILO, HDANT HF	117	1-Jan-64	1-Apr-94	NEV	1321	132131
		WATER DISTRIBUTION MAIN	104	1-Jan-91	1-Apr-94	NEV	8421	842245
		WATER TANK	103	1-Jan-91	1-Apr-94	NEV	8413	841427
F.E. Warren AFB • N2 • LF • Site Code GHXA0001	**5WL2158**	MISSILE LAUNCH FACILITY	201	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	206	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	203	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	202	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	213	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	208	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	204	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	209	1-Jan-64	1-Apr-94	NREI	8511	851147
			210	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	205	1-Jan-64	1-Apr-94	NEV	8123	812226
		MISSILE LAUNCH FACILITY	301	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	306	1-Jan-64	17-Oct-00	NEV	8932	890181

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
F.E. Warren AFB • N3 • LF • Site Code GHXB0001	5WL2159	DIESEL STORAGE	303	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	302	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	313	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	308	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	304	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	309	1-Jan-64	1-Apr-94	NREI	8511	851147
			310	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	305	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • N4 • LF • Site Code GHXC0001	5WL2160	MISSILE LAUNCH FACILITY	401	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	406	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	403	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	402	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	413	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	408	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	404	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	409	1-Jan-64	1-Apr-94	NREI	8511	851147
			410	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	405	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • N5 • LF • Site Code GHXD0001	5WL2161	MISSILE LAUNCH FACILITY	501	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	506	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	503	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	507	1-Jan-64	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	502	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	513	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	508	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	504	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	509	1-Jan-64	1-Apr-94	NREI	8511	851147
			510	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	505	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • N6 • LF • Site Code GHXE0001	5WL2162	MISSILE LAUNCH FACILITY	601	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	606	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	603	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	602	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	613	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	608	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	604	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	609	1-Jan-64	1-Apr-94	NREI	8511	851147
			610	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	605	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • N7 • LF • Site Code GHXF0001	5WL2163	MISSILE LAUNCH FACILITY	701	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	706	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	703	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	702	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	713	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	708	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	704	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	709	1-Jan-64	1-Apr-94	NREI	8511	851147
			710	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	705	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • N8 • LF • Site Code GHXG0001	5WL2164	MISSILE LAUNCH FACILITY	801	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	806	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	803	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	802	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	813	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	808	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	804	1-Jan-64	1-Apr-94	NEV	1251	125553

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
		ROAD	809	1-Jan-64	1-Apr-94	NREI	8511	851147
			810	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	805	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • N9 • LF • Site Code GHXH0001	5WL2165	MISSILE LAUNCH FACILITY	901	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	906	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	903	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	902	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	913	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	908	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	904	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	909	1-Jan-64	1-Apr-94	NREI	8511	851147
			910	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	905	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • N10 • LF • Site Code GHXJ0001	5WL2166	MISSILE LAUNCH FACILITY	1001	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1006	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1003	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1002	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1013	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	1008	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1004	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	1009	1-Jan-64	1-Apr-94	NREI	8511	851147
			1010	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1005	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • N11 • LF • Site Code GHXK0001	5WL2167	MISSILE LAUNCH FACILITY	1101	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1106	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1103	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1102	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1113	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	1108	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1104	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	1109	1-Jan-64	1-Apr-94	NREI	8511	851147
			1110	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1105	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • O1 • MAF • Site Code GHXL0001	5WL2168	MISSILE ALERT FACILITY	101	1-Jan-64	1-Apr-94	NREI	1457	141911
		BOUNDARY FENCE	111	1-Jan-64	1-Apr-94	NREI	8721	872245
		DIESEL STORAGE	105	1-Jan-64	1-Apr-94	NEV	1243	124234
			131	1-Jan-64	1-Apr-94	NEV		124134
			133	1-Jan-64	1-Apr-94	NEV		124137
			134	1-Jan-64	1-Apr-94	NEV		124134
			135	1-Jan-64	1-Apr-94	NEV		124234
		STORM DRAIN DISPOSAL	128	1-Jan-70	1-Apr-94	NEV	8321	871183
		DRIVEWAY	123	1-Jan-66	1-Apr-94	NREI	8511	851145
		EXTERIOR AREA LIGHTING	110	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	112	1-Jan-64	1-Apr-94	NREI	8722	872247
		FLAG POLE BASE	127	1-Jan-91	1-Apr-94	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	125	1-Jan-66	1-Apr-94	NREI	4425	214426
		GREASE TRAP	137	15-Jul-11	1-Apr-94	NREI	8314	831169
		HELICOPTER PAD	126	1-Jan-69	1-Apr-94	NREI	1112	116663
		PIPELINE, LIQUID FUEL	106	1-Jan-64	1-Apr-94	NEV	1251	125553
		WATER WELL	119	28-Jul-11	1-Apr-94	NEV	8414	841166
		ROAD	113	1-Jan-64	1-Apr-94	NREI	8511	851147
			115	1-Jan-64	1-Apr-94	NREI		851147
		VEHICLE PARKING NON ORGANIZATIONAL	114	1-Jan-64	1-Apr-94	NREI	8521	852262
		PRIMARY OVERHEAD DISTRIBUTION LINE	124	1-Jan-66	1-Apr-94	NEV	8121	812223
		SANITARY SEWAGE MAIN	108	1-Jan-64	1-Apr-94	NEV	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	109	1-Jan-64	1-Apr-94	NEV	8123	812226

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
		SEWAGE SEPTIC TANK	120	1-Jan-81	1-Apr-94	NEV	8314	831169
		SEWAGE TREATMENT AND DISPOSAL	107	1-Jan-91	1-Apr-94	NEV		831169
		SIDEWALK	3110	25-Nov-96	1-Apr-94	NEV	8524	852289
		SILO, HDANT HF	117	1-Jan-64	1-Apr-94	NEV	1321	132131
		TOWER, SP	130	1-Jan-64	1-Apr-94	NEV	1499	149968
		WATER DISTRIBUTION MAIN	104	1-Jan-64	1-Apr-94	NEV	8421	842245
		WATER TANK	103	1-Jan-64	1-Apr-94	NEV	8413	841427
F.E. Warren AFB • O2 • LF • Site Code GHXM0001	**5WL2169**	MISSILE LAUNCH FACILITY	201	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	206	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	203	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	202	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	213	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	208	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	204	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	209	1-Jan-64	1-Apr-94	NREI	8511	851147
			210	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	205	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • O3 • LF • Site Code GHXN0001	**5WL2170**	MISSILE LAUNCH FACILITY	301	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	306	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	303	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	302	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	313	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	308	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	304	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	309	1-Jan-64	1-Apr-94	NREI	8511	851147
			310	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	305	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • O4 • LF • Site Code GHXP0001	**5WL2171**	MISSILE LAUNCH FACILITY	401	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	406	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	403	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	402	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	413	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	408	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	404	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	409	1-Jan-64	1-Apr-94	NREI	8511	851147
			410	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	405	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • O5 • LF • Site Code GHXQ0001	**5WL2172**	MISSILE LAUNCH FACILITY	501	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	506	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	503	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	502	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	513	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	508	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	504	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	509	1-Jan-64	1-Apr-94	NREI	8511	851147
			510	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	505	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • O6 • LF • Site Code GHXR0001	**5WL2173**	MISSILE LAUNCH FACILITY	601	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	606	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	603	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	602	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	613	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	608	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	604	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	609	1-Jan-64	1-Apr-94	NREI	8511	851147
			610	1-Jan-64	1-Apr-94	NREI		851147

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Historic Status Code	FAC Code	CAT Code
		SECONDARY DISTRIBUTION LINE UNDERGROUND	605	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • O7 • LF • Site Code GHXS0001	5WL2174	MISSILE LAUNCH FACILITY	701	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	706	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	703	1-Jan-64	17-Oct-00	NEV	1243	124234
		STORM DRAIN DISPOSAL	707	1-Jan-67	17-Oct-00	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	702	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	713	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	708	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	704	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	709	1-Jan-64	1-Apr-94	NREI	8511	851147
			710	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	705	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • O8 • LF • Site Code GHXT0001	5WL2175	MISSILE LAUNCH FACILITY	801	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	806	1-Jan-64		NEV	8932	890181
		DIESEL STORAGE	803	1-Jan-64		NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	802	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	813	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	808	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	804	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	809	1-Jan-64	1-Apr-94	NREI	8511	851147
			810	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	805	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • O9 • LF • Site Code GHXU0001	5WL2176	MISSILE LAUNCH FACILITY	901	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	906	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	903	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	902	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	913	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	908	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	904	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	909	1-Jan-64	1-Apr-94	NREI	8511	851147
			910	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	905	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • O10 • LF • Site Code GHXV0001	5WL2177	MISSILE LAUNCH FACILITY	1001	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1006	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1003	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1002	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1013	1-Jan-64	1-Jan-64	NEV	8122	812926
		SECURITY FENCE	1008	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1004	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	1009	1-Jan-64	1-Apr-94	NREI	8511	851147
			1010	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1005	1-Jan-64	1-Apr-94	NEV	8123	812226
F.E. Warren AFB • O11 • LF • Site Code GHXW0001	5WL2178	MISSILE LAUNCH FACILITY	1101	1-Jan-64	17-Oct-00	NREI	1451	149512
		UTILITY LINE DUCTS	1106	1-Jan-64	17-Oct-00	NEV	8932	890181
		DIESEL STORAGE	1103	1-Jan-64	17-Oct-00	NEV	1243	124234
		ELECTRIC POWER STATION BUILDING	1102	1-Jan-64	1-Apr-94	NREI	8910	811149
		EXTERIOR AREA LIGHTING	1113	1-Jan-64	1-Apr-94	NEV	8122	812926
		SECURITY FENCE	1108	1-Jan-64	1-Apr-94	NREI	8722	872247
		PIPELINE, LIQUID FUEL	1104	1-Jan-64	1-Apr-94	NEV	1251	125553
		ROAD	1109	1-Jan-64	1-Apr-94	NREI	8511	851147
			1110	1-Jan-64	1-Apr-94	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	1105	1-Jan-64	1-Apr-94	NEV	8123	812226

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • A1 • MAF • Site Code NZBS0001	**24CA624**	CONCRETE BASE FOR MEECN ANTENNA	14100	1-Jun-04	9-Apr-97	NEV	1321	132134
		ANTENNA SUPPORT STRUCTURE	14190	1-Jan-79	9-Apr-97	NEV	1321	132134
		MISSILE OPERATIONS BUILDING	1	1-Jan-62	9-Apr-97	NREI	1457	141911
		UTILITY LINE DUCTS	89100	30-Dec-62	16-Jul-10	NREI	8932	890181
		WATER SUPPLY BUILDING	2	1-Jan-62	16-Jul-10	NREI	8910	841169
		DIESEL STORAGE	41150	1-Jan-62	16-Jul-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87100	30-Dec-62	16-Jul-10	NREI	8321	871183
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	16-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	16-Jul-10	NREI	8722	872247
		FLAG POLE BASE	100	1-Jan-62	16-Jul-10	NREI	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	3	3-Feb-10	16-Jul-10	NEV	4425	214426
		HELICOPTER PAD	11661	1-Jan-69	16-Jul-10	NEV	1112	116663
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	16-Jul-10	NREI	1251	125554
		MISSILE SHAFT ACCESS	14971	1-Jan-62	16-Jul-10	NREI	1453	149711
		WATER WELL	84100	1-Jan-61	16-Jul-10	NREI	8414	841166
		ROAD	85150	1-Jan-62	16-Jul-10	NREI	8511	851147
			85151	1-Jan-62	16-Jul-10	NREI	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	85232	1-Jan-62	16-Jul-10	NREI	8521	852262
		SANITARY SEWAGE MAIN	83200	1-Jan-62	16-Jul-10	NREI	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	16-Jul-10	NREI	8123	812226
		SECONDARY DISTRIBUTION LINE OVERHEAD	81260	24-Nov-05	16-Jul-10	NEV	8121	812224
		SEWAGE TREATMENT AND DISPOSAL	83100	1-Jan-62	16-Jul-10	NREI	8311	831165
		SIDEWALK	85200	30-Dec-94	16-Jul-10	NEV	8524	852289
		DUAL MODE ANTENNA (WHITE CONE)	13100	1-Jan-65	16-Jul-10	NREI	1321	132131
		TUNNEL	14981	1-Jan-62	16-Jul-10	NREI	1454	149811
		VEHICLE FUEL STATION	12300	1-Jan-93	16-Jul-10	NEV	1231	123335
		VEHICLE SERVICE RACK	21400	3-Dec-94	16-Jul-10	NEV	2145	214422
		WATER DISTRIBUTION MAIN	84201	1-Jan-62	16-Jul-10	NREI	8421	842245
		WATER SUPPLY TREATMENT	84000	1-Jan-62	16-Jul-10	NREI	8412	841165
Malmstrom AFB • A2 • LF • Site Code NZBT0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-61	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	16-Jul-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	1-Jan-92	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	16-Jul-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-61	16-Jul-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-61	16-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	16-Jul-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	16-Jul-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-61	16-Jul-10	NREI	7602	760512
		ROAD	85151	1-Jan-61	16-Jul-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-61	16-Jul-10	NREI	8123	812226
Malmstrom AFB • A3 • LF • Site Code NZBU0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-61	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	16-Jul-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	1-Jan-92	NEV	4111	411134
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-61	16-Jul-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-61	16-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	16-Jul-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	16-Jul-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-61	16-Jul-10	NREI	7602	760512
		ROAD	85130	1-Jan-61	16-Jul-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-61	16-Jul-10	NREI	8123	812226
Malmstrom AFB • A4 • LF • Site Code NZBV0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-61	25-Apr-06	NREI	1451	149512
			69000	1-Jan-61	19-Jul-10	NREI	7602	760512
		UTILITY LINE DUCTS	89010	30-Dec-62	19-Jul-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	19-Jul-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	30-Dec-62	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-61	19-Jul-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-61	19-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	19-Jul-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	19-Jul-10	NREI	1251	125554
		ROAD	85130	1-Jan-61	19-Jul-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-61	19-Jul-10	NREI	8123	812226

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • A5 • LF • Site Code NZBW0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-61	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	19-Jul-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	19-Jul-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	19-Jul-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-61	19-Jul-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-61	19-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	19-Jul-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	19-Jul-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-61	19-Jul-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	19-Jul-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	19-Jul-10	NREI	8123	812226
Malmstrom AFB • A6 • LF • Site Code NZBX0001	**24CA684**	MISSILE LAUNCH FACILITY	14900	1-Jan-61	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	19-Jul-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	19-Jul-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	19-Jul-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-61	19-Jul-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-61	19-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	19-Jul-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	19-Jul-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-61	19-Jul-10	NREI	7602	760512
		ROAD	85130	1-Jan-61	19-Jul-10	NREI	8511	851147
		ROAD BRIDGE	85160	1-Jan-61	19-Jul-10	NREI	8513	851142
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-61	19-Jul-10	NREI	8123	812226
Malmstrom AFB • A7 • LF • Site Code NZBY0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-61	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	19-Jul-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	19-Jul-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	19-Jul-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-61	19-Jul-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-61	19-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	19-Jul-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	19-Jul-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-61	19-Jul-10	NREI	7602	760512
		ROAD	85130	1-Jan-61	19-Jul-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-61	19-Jul-10	NREI	8123	812226
Malmstrom AFB • A8 • LF • Site Code NZBZ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-61	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	19-Jul-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	19-Jul-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	19-Jul-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-61	19-Jul-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-61	19-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	19-Jul-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	19-Jul-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-61	19-Jul-10	NREI	7602	760512
		ROAD	85130	1-Jan-61	19-Jul-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-61	19-Jul-10	NREI	8123	812226
Malmstrom AFB • A9 • LF • Site Code NZCA0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-61	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	19-Jul-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	19-Jul-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	19-Jul-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-61	19-Jul-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-61	19-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	19-Jul-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	19-Jul-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-61	19-Jul-10	NREI	7602	760512
		ROAD	85130	1-Jan-61	19-Jul-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-61	19-Jul-10	NREI	8123	812226
Malmstrom AFB • A10 • LF • Site Code NZCB0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-61	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	19-Jul-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-89	19-Jul-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	19-Jul-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-61	26-Apr-06	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-61	19-Jul-10	NREI	8122	812926

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		SECURITY FENCE	87201	1-Jan-62	19-Jul-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	19-Jul-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-61	19-Jul-10	NREI	7602	760512
		ROAD	85130	1-Jan-61	19-Jul-10	NREI	8511	851147
			85150	1-Jan-61	19-Jul-10	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-61	1-Jan-61	NAR	8123	812226
Malmstrom AFB • A11 • LF • Site Code NZCC0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-61	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	19-Jul-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	19-Jul-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	19-Jul-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-61	26-Apr-06	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-61	19-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	19-Jul-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	19-Jul-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-61	19-Jul-10	NREI	7602	760512
		ROAD	85130	1-Jan-61	19-Jul-10	NREI	8511	851147
			85150	1-Jan-61	19-Jul-10	NREI		851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-61	19-Jul-10	NREI	8123	812226
Malmstrom AFB • B1 • MAF • Site Code NZCD0001	**TBD**	CONCRETE BASE FOR MEECN ANTENNA	14100	1-Jun-04	19-Jul-10	NREI	1321	132134
		MISSILE OPERATIONS BUILDING	1	1-Jan-62	25-Apr-06	NREI	1457	141911
		UTILITY LINE DUCTS	89100	30-Dec-62	19-Jul-10	NREI	8932	890181
		WATER SUPPLY BUILDING	2	1-Jan-62	19-Jul-10	NREI	8910	841169
		DIESEL STORAGE	41150	1-Jan-62	19-Jul-10	NREI	1243	124134
		STORM DRAIN DISPOSAL	87100	30-Dec-62	19-Jul-10	NREI	8321	871183
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	19-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	19-Jul-10	NREI	8722	872247
		FLAG POLE BASE	100	1-Jan-69	19-Jul-10	NREI	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	3	1-Jan-66	19-Jul-10	NREI	4425	214426
		HELICOPTER PAD	11661	1-Jan-69	19-Jul-10	NREI	1112	116663
		ISST ANTENNA	13200	1-May-62	19-Jul-10	NREI	1321	132134
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	19-Jul-10	NREI	1251	125554
		MISSILE SHAFT ACCESS	14971	1-Jan-62	19-Jul-10	NREI	1453	149711
		WATER WELL	84100	1-Jan-61	19-Jul-10	NREI	8414	841166
			84101	13-Sep-07	19-Jul-10	NREI	8414	841166
		ROAD	85150	1-Jan-62	19-Jul-10	NREI	8511	851147
			85151	1-Jan-62	19-Jul-10	NREI	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	85232	1-Jan-62	19-Jul-10	NREI	8521	852262
		SANITARY SEWAGE MAIN	83200	1-Jan-62	19-Jul-10	NREI	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	19-Jul-10	NREI	8123	812226
			81260	24-Nov-05	19-Jul-10	NREI	8121	812224
		SEWAGE TREATMENT AND DISPOSAL	83100	1-Jan-62	19-Jul-10	NREI	8311	831165
		SIDEWALK	85200	30-Dec-94	19-Jul-10	NREI	8524	852289
		DUAL MODE ANTENNA (WHITE CONE)	13100	1-Jan-65	19-Jul-10	NREI	1321	132131
		TUNNEL	14981	1-Jan-62	19-Jul-10	NREI	1454	149811
		VEHICLE FUEL STATION	12300	1-Jan-93	19-Jul-10	NREI	1231	123335
		VEHICLE SERVICE RACK	21400	30-Dec-94	19-Jul-10	NREI	2145	214422
		WATER DISTRIBUTION MAIN	84201	1-Jan-62	19-Jul-10	NREI	8421	842245
		WATER SUPPLY TREATMENT	84000	1-Jan-62	19-Jul-10	NREI	8412	841165
Malmstrom AFB • B2 • LF • Site Code NZCE0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	19-Jul-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	19-Jul-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	19-Jul-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	19-Jul-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	19-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	19-Jul-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	19-Jul-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	19-Jul-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	19-Jul-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	19-Jul-10	NREI	8123	812226
		MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	19-Jul-10	NREI	8932	890181

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • B3 • LF • Site Code NZCF0001	**TBD**	DIESEL STORAGE	41150	1-Jan-92	19-Jul-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	19-Jul-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	19-Jul-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	19-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	19-Jul-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	19-Jul-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	19-Jul-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	19-Jul-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	19-Jul-10	NREI	8123	812226
Malmstrom AFB • B4 • LF • Site Code NZCG0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	19-Jul-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	19-Jul-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	19-Jul-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	19-Jul-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	19-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	19-Jul-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	19-Jul-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	19-Jul-10	NREI	7602	760512
		MONITORING WELL	83513	1-Jan-62	19-Jul-10	NEV	8840	892921
		ROAD	85130	1-Jan-62	19-Jul-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	19-Jul-10	NREI	8123	812226
Malmstrom AFB • B5 • LF • Site Code NZCH0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	19-Jul-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	19-Jul-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87100	1-Jan-72	19-Jul-10	NREI	8321	871183
			87110	30-Dec-62	19-Jul-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	19-Jul-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	19-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	19-Jul-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	19-Jul-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	19-Jul-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	19-Jul-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	19-Jul-10	NREI	8123	812226
Malmstrom AFB • B6 • LF • Site Code NZCJ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	19-Jul-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	19-Jul-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	19-Jul-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	26-Apr-06	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	19-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	19-Jul-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	19-Jul-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	19-Jul-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	19-Jul-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	19-Jul-10	NREI	8123	812226
Malmstrom AFB • B7 • LF • Site Code NZCK0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	4-Aug-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	4-Aug-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	4-Aug-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	4-Aug-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	4-Aug-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	4-Aug-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	1-Jan-62	4-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	4-Aug-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	4-Aug-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	4-Aug-10	NREI	8123	812226
Malmstrom AFB • B8 • LF • Site Code NZCL0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	19-Jul-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	19-Jul-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	19-Jul-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	19-Jul-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	19-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	19-Jul-10	NREI	8722	872247

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	19-Jul-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	19-Jul-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	19-Jul-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	19-Jul-10	NREI	8123	812226
Malmstrom AFB • B9 • LF • Site Code NZCM0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	19-Jul-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	19-Jul-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	19-Jul-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	19-Jul-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	19-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	19-Jul-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	19-Jul-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	19-Jul-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	19-Jul-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	19-Jul-10	NREI	8123	812226
Malmstrom AFB • B10 • LF • Site Code NZCN0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	19-Jul-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	19-Jul-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	19-Jul-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	19-Jul-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	19-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	19-Jul-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	19-Jul-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	19-Jul-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	19-Jul-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	19-Jul-10	NREI	8123	812226
Malmstrom AFB • B11 • LF • Site Code NZCP0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	19-Jul-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-89	19-Jul-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	19-Jul-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	19-Jul-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	19-Jul-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	19-Jul-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	19-Jul-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	19-Jul-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	19-Jul-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	19-Jul-10	NREI	8123	812226
Malmstrom AFB • C1 • MAF • Site Code NZCQ0001	**TBD**	MISSILE LAUNCH FACILITY	1	1-Jan-62	25-Apr-06	NREI	1457	141911
		CONCRETE BASE FOR MEECN ANTENNA	14100	1-Jun-04	4-Aug-10	NREI	1321	132134
		UTILITY LINE DUCTS	89100	30-Dec-62	4-Aug-10	NREI	8932	890181
		WATER SUPPLY BUILDING	2	1-Jan-62	20-Jul-10	NREI	8910	841169
		DIESEL STORAGE	41150	1-Jan-62	4-Aug-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87100	30-Dec-62	4-Aug-10	NREI	8321	871183
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	4-Aug-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	4-Aug-10	NREI	8722	872247
		FLAG POLE BASE	100	1-Jan-62	4-Aug-10	NREI	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	3	1-Jan-66	4-Aug-10	NREI	4425	214426
		HELICOPTER PAD	11661	1-Jan-69	4-Aug-10	NREI	1112	116663
		ISST ANTENNA	14190	1-Jan-69	4-Aug-10	NREI	1321	132134
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	4-Aug-10	NREI	1251	125554
		MISSILE SHAFT ACCESS	14971	1-Jan-62	4-Aug-10	NREI	1453	149711
		WATER WELL	84100	1-Jan-61	4-Aug-10	NREI	8414	841166
		ROAD	85150	1-Jan-62	4-Aug-10	NREI	8511	851147
			85151	1-Jan-62	4-Aug-10	NREI	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	85232	1-Jan-62	4-Aug-10	NREI	8521	852262
		SANITARY SEWAGE MAIN	83200	1-Jan-62	4-Aug-10	NREI	8321	832266
		SANITARY SEWAGE PUMP STATION	83201	1-Jan-68	4-Aug-10	NREI	8316	832267
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	4-Aug-10	NREI	8123	812226
		SECONDARY DISTRIBUTION LINE OVERHEAD	81260	24-Nov-05	4-Aug-10	NREI	8121	812224
		SEWAGE TREATMENT AND DISPOSAL	83100	1-Jan-62	4-Aug-10	NREI	8311	831165
		SIDEWALK	85200	30-Dec-94	4-Aug-10	NREI	8524	852289

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		DUAL MODE ANTENNA (WHITE CONE)	13100	1-Jan-65	4-Aug-10	NREI	1321	132131
		TUNNEL	14981	1-Jan-62	4-Aug-10	NREI	1454	149811
		VEHICLE FUEL STATION	12300	1-Jan-93	4-Aug-10	NREI	1231	123335
		VEHICLE SERVICE RACK	21400	30-Dec-94	4-Aug-10	NREI	2145	214422
		WATER DISTRIBUTION MAIN	84201	1-Jan-62	4-Aug-10	NREI	8421	842245
		WATER SUPPLY TREATMENT	84000	1-Jan-62	4-Aug-10	NREI	8412	841165
Malmstrom AFB • C2 • LF • Site Code NZCR0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	4-Aug-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	4-Aug-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	4-Aug-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	4-Aug-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	4-Aug-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	4-Aug-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	4-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	4-Aug-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	4-Aug-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	4-Aug-10	NREI	8123	812226
Malmstrom AFB • C3 • LF • Site Code NZCS0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	4-Aug-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	4-Aug-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	4-Aug-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	4-Aug-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	4-Aug-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	4-Aug-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	4-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	4-Aug-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	4-Aug-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	4-Aug-10	NREI	8123	812226
Malmstrom AFB • C4 • LF • Site Code NZCT0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	4-Aug-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	4-Aug-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	4-Aug-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	4-Aug-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	4-Aug-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	4-Aug-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	4-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	4-Aug-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	4-Aug-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	4-Aug-10	NREI	8123	812226
Malmstrom AFB • C5 • LF • Site Code NZCU0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	4-Aug-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-62	4-Aug-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87100	1-Jan-72	4-Aug-10	NREI	8321	871183
			87110	30-Dec-62	4-Aug-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	4-Aug-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	4-Aug-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	4-Aug-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	4-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	4-Aug-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	4-Aug-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	4-Aug-10	NREI	8123	812226
Malmstrom AFB • C6 • LF • Site Code NZCV0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	4-Aug-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	4-Aug-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	4-Aug-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	4-Aug-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	4-Aug-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	4-Aug-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	4-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	4-Aug-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	4-Aug-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	4-Aug-10	NREI	8123	812226

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • C7 • LF • Site Code NZCW0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	4-Aug-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-62	4-Aug-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	4-Aug-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	4-Aug-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	4-Aug-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	4-Aug-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	4-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	4-Aug-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	4-Aug-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	4-Aug-10	NREI	8123	812226
Malmstrom AFB • C8 • LF • Site Code NZCX0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	4-Aug-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	4-Aug-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	4-Aug-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	4-Aug-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	4-Aug-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	4-Aug-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	4-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	4-Aug-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	4-Aug-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	4-Aug-10	NREI	8123	812226
Malmstrom AFB • C9 • LF • Site Code NZCY0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	4-Aug-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	4-Aug-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	4-Aug-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	4-Aug-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	4-Aug-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	4-Aug-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	4-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	4-Aug-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	4-Aug-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	4-Aug-10	NREI	8123	812226
Malmstrom AFB • C10 • LF • Site Code NZCZ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	4-Aug-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	4-Aug-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	4-Aug-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	4-Aug-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	4-Aug-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	4-Aug-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	4-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	4-Aug-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	4-Aug-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	4-Aug-10	NREI	8123	812226
Malmstrom AFB • C11 • LF • Site Code NZDA0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	4-Aug-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	4-Aug-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	4-Aug-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	4-Aug-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	4-Aug-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	4-Aug-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	4-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	4-Aug-10	NREI	7602	760512
		MONITORING WELL	83514	(blank)	4-Aug-10	NEV	8840	892921
		ROAD	85130	1-Jan-62	4-Aug-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	4-Aug-10	NREI	8123	812226
		CONCRETE BASE FOR MEECN ANTENNA	14100	1-Jun-04	5-Aug-10	NREI	1321	132134
		MISSILE OPERATIONS BUILDING	1	1-Jan-62	25-Apr-06	NREI	1457	141911
		UTILITY LINE DUCTS	89100	30-Dec-62	5-Aug-10	NREI	8932	890181
		WATER SUPPLY BUILDING	2	1-Jan-62	5-Aug-10	NREI	8910	841169
		DIESEL STORAGE	41150	1-Jan-62	5-Aug-10	NREI	4111	411134

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • D1 • MAF • Site Code NZDB0001	**TBD**	STORM DRAIN DISPOSAL	87100	30-Dec-62	5-Aug-10	NREI	8321	871183
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	5-Aug-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	5-Aug-10	NREI	8722	872247
		FLAG POLE BASE	100	1-Jan-03	5-Aug-10	NREI	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	3	1-Jan-66	5-Aug-10	NREI	4425	214426
		HELICOPTER PAD	11661	1-Jan-69	5-Aug-10	NREI	1112	116663
		ISST ANTENNA	14190	1-Jan-62	5-Aug-10	NREI	1321	132134
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	5-Aug-10	NREI	1251	125554
		MISSILE SHAFT ACCESS	14971	1-Jan-62	5-Aug-10	NREI	1453	149711
		MONITORING WELL	81228	22-Nov-16	5-Aug-10	NEV	8840	892921
		WATER WELL	84100	1-Jan-61	5-Aug-10	NREI	8414	841166
		ROAD	85130	1-Jan-65	5-Aug-10	NREI	8511	851147
			85150	1-Jan-62	5-Aug-10	NREI	8511	851147
			85151	1-Jan-62	5-Aug-10	NREI	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	85232	1-Jan-62	5-Aug-10	NREI	8521	852262
		SANITARY SEWAGE MAIN	83200	1-Jan-62	5-Aug-10	NREI	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	5-Aug-10	NREI	8123	812226
		SECONDARY DISTRIBUTION LINE OVERHEAD	81260	30-Dec-65	5-Aug-10	NREI	8121	812224
		SEWAGE TREATMENT AND DISPOSAL	83100	1-Jan-62	5-Aug-10	NREI	8311	831165
		SIDEWALK	85200	30-Dec-94	5-Aug-10	NREI	8524	852289
		DUAL MODE ANTENNA (WHITE CONE)	13100	1-Jan-65	5-Aug-10	NREI	1321	132131
		TUNNEL	14981	1-Jan-62	5-Aug-10	NREI	1454	149811
		VEHICLE FUEL STATION	12300	1-Jan-93	5-Aug-10	NREI	1231	123335
		VEHICLE SERVICE RACK	21400	30-Dec-94	5-Aug-10	NREI	2145	214422
		WATER DISTRIBUTION MAIN	84201	1-Jan-62	5-Aug-10	NREI	8421	842245
		WATER SUPPLY TREATMENT	84000	1-Jan-62	5-Aug-10	NREI	8412	841165
Malmstrom AFB • D2 • LF • Site Code NZDC0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	5-Aug-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	5-Aug-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	5-Aug-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	5-Aug-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	5-Aug-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	5-Aug-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	5-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	5-Aug-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	5-Aug-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	5-Aug-10	NREI	8123	812226
Malmstrom AFB • D3 • LF • Site Code NZDD0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	5-Aug-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-89	5-Aug-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	5-Aug-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	5-Aug-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	5-Aug-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	5-Aug-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	5-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	5-Aug-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	5-Aug-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	5-Aug-10	NREI	8123	812226
Malmstrom AFB • D4 • LF • Site Code NZDE0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	9-Aug-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-89	9-Aug-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	9-Aug-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	9-Aug-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	9-Aug-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	9-Aug-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	9-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	9-Aug-10	NREI	7602	760512
		ROAD	85130	1-Jan-62	9-Aug-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	9-Aug-10	NREI	8123	812226
		MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	25-Apr-06	NEV	4111	411134

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • D5 • LF • Site Code NZDF0001	**TBD**	STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	9-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	24-Jun-13	NREI	7602	760512
		ROAD	85130	1-Jan-62	24-Jun-13	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	24-Jun-13	NEV	8123	812226
Malmstrom AFB • D6 • LF • Site Code NZDG0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	9-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	24-Jun-13	NREI	7602	760512
		ROAD	85130	1-Jan-62	24-Jun-13	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	24-Jun-13	NEV	8123	812226
Malmstrom AFB • D7 • LF • Site Code NZDH0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-89	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	9-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	24-Jun-13	NREI	7602	760512
		ROAD	85130	1-Jan-62	24-Jun-13	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	24-Jun-13	NEV	8123	812226
Malmstrom AFB • D8 • LF • Site Code NZDJ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	9-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	24-Jun-13	NREI	7602	760512
		ROAD	85130	1-Jan-62	24-Jun-13	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	24-Jun-13	NEV	8123	812226
Malmstrom AFB • D9 • LF • Site Code NZDK0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	9-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	9-Aug-10	NEV	7602	760512
		ROAD	85130	1-Jan-62	9-Aug-10	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	9-Aug-10	NEV	8123	812226
Malmstrom AFB • D10 • LF • Site Code NZDL0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	1-Jan-92	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-92	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	9-Aug-10	NREI	1251	125554
		ROAD	85130	1-Jan-62	9-Aug-10	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	9-Aug-10	NEV	8123	812226

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • D11 • LF • Site Code NZDM0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	1-Jan-92	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-92	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	9-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	9-Aug-10	NEV	7602	760512
		ROAD	85130	1-Jan-62	9-Aug-10	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	9-Aug-10	NEV	8123	812226
Malmstrom AFB • E1 • MAF • Site Code NZDN0001	**TBD**	CONCRETE BASE FOR MEECN ANTENNA	14100	1-Jun-04	9-Aug-10	NEV	1321	132134
			14190	1-Jan-62	9-Aug-10	NEV	1321	132134
		MISSILE OPERATIONS BUILDING	1	1-Jan-62	25-Apr-06	NREI	1457	141911
		UTILITY LINE DUCTS	89100	30-Dec-62	25-Apr-06	NEV	8932	890181
		WATER SUPPLY BUILDING	2	1-Jan-62	25-Apr-06	NEV	8910	841169
		DIESEL STORAGE	41150	1-Jan-62	25-Apr-06	NEV	4111	411134
			41155	1-Jan-64	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87100	30-Dec-62	25-Apr-06	NEV	8321	871183
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	25-Apr-06	NEV	8722	872247
		FLAG POLE BASE	100	1-Jan-03	25-Apr-06	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	3	1-Jan-64	25-Apr-06	NEV	4425	214426
		HELICOPTER PAD	11661	1-Jan-69	25-Apr-06	NEV	1112	116663
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	25-Apr-06	NEV	1251	125554
		MISSILE SHAFT ACCESS	14971	1-Jan-62	25-Apr-06	NEV	1453	149711
		WATER WELL	84100	1-Jan-61	25-Apr-06	NEV	8414	841166
		ROAD	85150	1-Jan-62	25-Apr-06	NEV	8511	851147
			85151	1-Jan-62	25-Apr-06	NEV		851147
		VEHICLE PARKING NON ORGANIZATIONAL	85232	1-Jan-62	25-Apr-06	NEV	8521	852262
		SANITARY SEWAGE MAIN	83200	1-Jan-62	25-Apr-06	NEV	8321	832266
		SANITARY SEWAGE PUMP STATION	83201	1-Jan-68	4-Aug-10	NREI	8316	832267
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	4-Aug-10	NEV	8123	812226
		SECONDARY DISTRIBUTION LINE OVERHEAD	81260	24-Nov-05	4-Aug-10	NEV	8121	812224
		SEWAGE TREATMENT AND DISPOSAL	83100	1-Jan-62	4-Aug-10	NEV	8311	831165
		SIDEWALK	85200	30-Dec-94	4-Aug-10	NEV	8524	852289
		DUAL MODE ANTENNA (WHITE CONE)	13100	1-Jan-65	4-Aug-10	NEV	1321	132131
		TUNNEL	14981	1-Jan-62	4-Aug-10	NEV	1454	149811
		VEHICLE FUEL STATION	12300	1-Jan-93	4-Aug-10	NEV	1231	123335
		VEHICLE SERVICE RACK	21400	30-Dec-94	4-Aug-10	NEV	2145	214422
		WATER DISTRIBUTION MAIN	84201	1-Jan-62	4-Aug-10	NEV	8421	842245
		WATER SUPPLY TREATMENT	84000	1-Jan-62	4-Aug-10	NEV	8412	841165
Malmstrom AFB • E2 • LF • Site Code NZDP0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	9-Aug-10	NREI	8932	890181
		DIESEL STORAGE	41150	1-Jan-62	9-Aug-10	NREI	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	9-Aug-10	NREI	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	9-Aug-10	NREI	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	9-Aug-10	NREI	8122	812926
		SECURITY FENCE	87201	1-Jan-62	9-Aug-10	NREI	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	9-Aug-10	NREI	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	9-Aug-10	NREI	7602	760512

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		ROAD	85130	1-Jan-62	9-Aug-10	NREI	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	9-Aug-10	NREI	8123	812226
Malmstrom AFB • E3 • LF • Site Code NZDQ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • E4 • LF • Site Code NZDR0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-62	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • E5 • LF • Site Code NZDS0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • E6 • LF • Site Code NZDT0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • E7 • LF • Site Code NZDU0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-89	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
		MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • E8 • LF • Site Code NZDV0001	**TBD**	EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • E9 • LF • Site Code NZDW0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • E10 • LF • Site Code NZDX0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • E11 • LF • Site Code NZDY0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-62	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • F1 • MAF • Site Code NZDZ0001	**TBD**	CONCRETE BASE FOR MEECN ANTENNA	14100	1-Jun-04	1-Jan-62	NEV	1321	132134
		ANTENNA SUPPORT STRUCTURE	14190	1-Jan-79	1-Jan-62	NEV	1321	132134
		MISSILE OPERATIONS BUILDING	1	1-Jan-62	25-Apr-06	NREI	1457	141911
		UTILITY LINE DUCTS	89100	30-Dec-62	25-Apr-06	NEV	8932	890181
		WATER SUPPLY BUILDING	2	1-Jan-62	25-Apr-06	NEV	8910	841169
		COMPRESSED AIR DISTRIBUTION	89300	1-Jan-62	25-Apr-06	NEV	8930	890144
		DIESEL STORAGE	41150	1-Jan-62	25-Apr-06	NEV	4111	411134
			41155	1-Jan-64	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87100	30-Dec-62	25-Apr-06	NEV	8321	871183
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	25-Apr-06	NEV	8722	872247
		FLAG POLE BASE	100	1-Jan-03	25-Apr-06	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	3	1-Jan-64	25-Apr-06	NEV	4425	214426
		HELICOPTER PAD	11661	1-Jan-69	25-Apr-06	NEV	1112	116663
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	25-Apr-06	NEV	1251	125554
		MISSILE SHAFT ACCESS	14971	1-Jan-62	25-Apr-06	NEV	1453	149711
		MONITORING WELL	81227	22-Nov-16	25-Apr-06	NEV	8840	892921
		WATER WELL	84100	1-Jan-61	25-Apr-06	NEV	8414	841166
		ROAD	85150	1-Jan-62	25-Apr-06	NEV	8511	851147
			85151	1-Jan-62	25-Apr-06	NEV	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	85232	1-Jan-62	25-Apr-06	NEV	8521	852262
		SANITARY SEWAGE MAIN	83200	1-Jan-62	25-Apr-06	NEV	8321	832266

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	25-Apr-06	NEV	8123	812226
		SECONDARY DISTRIBUTION LINE OVERHEAD	81260	24-Nov-05	25-Apr-06	NEV	8121	812224
		SEWAGE TREATMENT AND DISPOSAL	83100	1-Jan-62	25-Apr-06	NEV	8311	831165
		SIDEWALK	85200	30-Dec-94	25-Apr-06	NEV	8524	852289
		DUAL MODE ANTENNA (WHITE CONE)	13100	1-Jan-65	25-Apr-06	NEV	1321	132131
		TUNNEL	14981	1-Jan-62	25-Apr-06	NEV	1454	149811
		VEHICLE FUEL STATION	12300	1-Jan-93	25-Apr-06	NEV	1231	123335
		VEHICLE SERVICE RACK	21400	30-Dec-94	25-Apr-06	NEV	2145	214422
		WATER DISTRIBUTION MAIN	84201	1-Jan-62	25-Apr-06	NEV	8421	842245
		WATER STORAGE TANK	84101	1-Jan-66	25-Apr-06	NEV	8413	841427
		WATER SUPPLY TREATMENT	84000	1-Jan-62	25-Apr-06	NEV	8412	841165
Malmstrom AFB • F2 • LF • Site Code NZEA0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-91	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • F3 • LF • Site Code NZEB0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	1-Jan-92	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-62	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • F4 • LF • Site Code NZEC0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	25-Apr-06	NEV	4111	411134
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • F5 • LF • Site Code NZED0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	1-Jan-92	NEV	4111	411134
		STORM DRAIN DISPOSAL	87100	30-Dec-62	1-Jan-92	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • F6 • LF • Site Code NZEE0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	25-Apr-06	NEV	4111	411134
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • F7 • LF • Site Code NZEF0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	25-Apr-06	NEV	4111	411134
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • F8 • LF • Site Code NZEG0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • F9 • LF • Site Code NZEH0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • F10 • LF • Site Code NZEJ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • F11 • LF • Site Code NZEL0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	3-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		MONITORING WELL	83515	(blank)	1-Jan-62	NEV	8840	892921
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
		CONCRETE BASE FOR MEECN ANTENNA	14100	1-Jun-04	1-Jan-62	NEV	1321	132134
		ANTENNA SUPPORT STRUCTURE	14190	1-Jan-79	1-Jan-62	NEV	1321	132134
		UTILITY LINE DUCTS	89100	30-Dec-62	1-Jan-62	NEV	8932	890181
		WATER SUPPLY BUILDING	2	1-Jan-62	1-Jan-62	NEV	8910	841169

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • G1 • MAF • Site Code NZEM0001	**TBD**	DIESEL STORAGE	41150	1-Jan-62	1-Jan-62	NEV	4111	411134
		DIESEL STORAGE	41155	1-Jan-64	1-Jan-62	NEV	1243	124134
		STORM DRAIN DISPOSAL	87100	30-Dec-62	1-Jan-62	NEV	8321	871183
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		FLAG POLE BASE	100	1-Jan-03	1-Jan-62	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	3	1-Jan-64	1-Jan-62	NEV	4425	214426
		HELICOPTER PAD	11661	1-Jan-69	1-Jan-62	NEV	1112	116663
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MISSILE SHAFT ACCESS	14971	1-Jan-62	1-Jan-62	NEV	1453	149711
		MISSILE OPERATIONS BUILDING	1	1-Jan-62	25-Apr-06	NREI	1457	141911
		WATER WELL	84100	1-Jan-61	25-Apr-06	NEV	8414	841166
			84101	1-Jan-92	25-Apr-06	NEV	8414	841166
		ROAD	85150	1-Jan-62	25-Apr-06	NEV	8511	851147
			85151	1-Jan-62	25-Apr-06	NEV	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	85232	1-Jan-62	25-Apr-06	NEV	8521	852262
		SANITARY SEWAGE MAIN	83200	1-Jan-62	25-Apr-06	NEV	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	25-Apr-06	NEV	8123	812226
		SECONDARY DISTRIBUTION LINE OVERHEAD	81260	24-Nov-05	25-Apr-06	NEV	8121	812224
		SEWAGE TREATMENT AND DISPOSAL	83100	1-Jan-62	25-Apr-06	NEV	8311	831165
		SIDEWALK	85200	30-Dec-94	25-Apr-06	NEV	8524	852289
		DUAL MODE ANTENNA (WHITE CONE)	13100	1-Jan-65	25-Apr-06	NEV	1321	132131
		TUNNEL	14981	1-Jan-62	25-Apr-06	NEV	1454	149811
		VEHICLE FUEL STATION	12300	1-Jan-93	25-Apr-06	NEV	1231	123335
		VEHICLE SERVICE RACK	21400	30-Dec-94	25-Apr-06	NEV	2145	214422
		WATER DISTRIBUTION MAIN	84201	1-Jan-62	25-Apr-06	NEV	8421	842245
		WATER STORAGE TANK	84102	1-Jan-66	25-Apr-06	NEV	8413	841427
		WATER SUPPLY TREATMENT	84000	1-Jan-62	25-Apr-06	NEV	8412	841165
Malmstrom AFB • G2 • LF • Site Code NZEN0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-92	1-Jan-92	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-92	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • G3 • LF • Site Code NZEP0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-92	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-89	1-Jan-89	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-89	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	25-Apr-06	NEV	7602	760512
		ROAD	85130	1-Jan-62	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	25-Apr-06	NEV	8123	812226
Malmstrom AFB • G4 • LF • Site Code NZEQ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
			41150	1-Jan-91	25-Apr-06	NEV	4111	411134
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	25-Apr-06	NEV	7602	760512
		ROAD	85130	1-Jan-62	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	25-Apr-06	NEV	8123	812226
		MISSILE LAUNCH FACILITY	14900	1-Jan-92	25-Apr-06	NREI	1451	149512

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • G5 • LF • Site Code NZER0001	**TBD**	UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • G6 • LF • Site Code NZES0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-92	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-91	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • G7 • LF • Site Code NZET0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-92	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-91	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • G8 • LF • Site Code NZEU0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-92	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-91	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • G9 • LF • Site Code NZEV0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-91	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • G10 • LF • Site Code NZEW0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-92	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-91	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • G11 • LF • Site Code NZEX0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-89	1-Jan-89	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-89	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • H1 • MAF • Site Code NZEY0001	**TBD**	CONCRETE BASE FOR MEECN ANTENNA	14100	1-Jun-04	1-Jan-62	NEV	1321	132134
		ANTENNA SUPPORT STRUCTURE	14190	1-Jan-79	1-Jan-62	NEV	1321	132134
		UTILITY LINE DUCTS	89100	30-Dec-62	1-Jan-62	NEV	8932	890181
		WATER SUPPLY BUILDING	2	1-Jan-62	1-Jan-62	NEV	8910	841169
		DIESEL STORAGE	41150	1-Jan-62	1-Jan-62	NEV	4111	411134
		STORM DRAIN DISPOSAL	87100	30-Dec-62	1-Jan-62	NEV	8321	871183
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		FLAG POLE BASE	100	1-Jan-03	1-Jan-62	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	3	1-Jan-66	1-Jan-62	NEV	4425	214426
		HELICOPTER PAD	11661	1-Jan-69	1-Jan-62	NEV	1112	116663
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MISSILE SHAFT ACCESS	14971	1-Jan-62	1-Jan-62	NEV	1453	149711
		MISSILE OPERATIONS BUILDING	1	1-Jan-62	25-Apr-06	NREI	1457	141911
		WATER WELL	84100	1-Jan-61	25-Apr-06	NEV	8414	841166
		ROAD	85150	1-Jan-62	25-Apr-06	NEV	8511	851147
			85151	1-Jan-62	25-Apr-06	NEV	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	85232	1-Jan-62	25-Apr-06	NEV	8521	852262
		SANITARY SEWAGE MAIN	83200	1-Jan-62	25-Apr-06	NEV	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	25-Apr-06	NEV	8123	812226
		SECONDARY DISTRIBUTION LINE OVERHEAD	81260	30-Dec-65	25-Apr-06	NEV	8121	812224
		SEWAGE TREATMENT AND DISPOSAL	83100	1-Jan-62	25-Apr-06	NEV	8311	831165
		SIDEWALK	85200	30-Dec-04	25-Apr-06	NEV	8524	852289
		DUAL MODE ANTENNA (WHITE CONE)	13100	1-Jan-65	25-Apr-06	NEV	1321	132131
		TUNNEL	14981	1-Jan-62	25-Apr-06	NEV	1454	149811
		VEHICLE FUEL STATION	12300	1-Jan-93	25-Apr-06	NEV	1231	123335
		VEHICLE SERVICE RACK	21400	30-Dec-94	25-Apr-06	NEV	2145	214422
		WATER DISTRIBUTION MAIN	84201	1-Jan-62	25-Apr-06	NEV	8421	842245
		WATER STORAGE TANK	84102	1-Jan-66	25-Apr-06	NEV	8413	841427
		WATER SUPPLY TREATMENT	84000	1-Jan-62	25-Apr-06	NEV	8412	841165
		WATER SURFACE SUPPLY	84101	1-Jan-66	25-Apr-06	NEV	8414	841163
Malmstrom AFB • H10 • LF • Site Code NZFH0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-91	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • H11 • LF • Site Code NZFJ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • H2 • LF • Site Code NZEZ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-89	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • H3 • LF • Site Code NZFA0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62		NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • H4 • LF • Site Code NZFB0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87100	1-Jan-72	25-Apr-06	NEV	8321	871183
			87110	30-Dec-62	25-Apr-06	NEV		871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • H5 • LF • Site Code NZFC0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • H6 • LF • Site Code NZFD0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-91	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
		MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • H7 • LF • Site Code NZFE0001	**TBD**	DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-91	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • H8 • LF • Site Code NZFF0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-91	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • H9 • LF • Site Code NZFG0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • H10 • LF • Site Code NZFH0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-91	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • H11 • LF • Site Code NZFJ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
		CONCRETE BASE FOR MEECN ANTENNA	14100	1-Jun-04	1-Jan-62	NEV	1321	132134
		ANTENNA SUPPORT STRUCTURE	14190	1-Jan-79	1-Jan-62	NEV		132134
		UTILITY LINE DUCTS	89100	30-Dec-62	1-Jan-62	NEV	8932	890181
		WATER SUPPLY BUILDING	2	1-Jan-62	1-Jan-62	NEV	8910	841169
		DIESEL STORAGE	41150	1-Jan-62	1-Jan-62	NEV	4111	411134
		STORM DRAIN DISPOSAL	87100	30-Dec-62	1-Jan-62	NEV	8321	871183
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		FLAG POLE BASE	100	1-Jan-03	1-Jan-62	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	3	6-Aug-08	1-Jan-62	NEV	4425	214426
		HELICOPTER PAD	11661	1-Jan-69	1-Jan-62	NEV	1112	116663

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • I1 • MAF • Site Code NZFK0001	**TBD**	PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MISSILE SHAFT ACCESS	14971	1-Jan-62	1-Jan-62	NEV	1453	149711
		MISSILE OPERATIONS BUILDING	1	1-Jan-62	25-Apr-06	NREI	1457	141911
		WATER WELL	84100	1-Jan-61	25-Apr-06	NEV	8414	841166
		ROAD	85150	1-Jan-62	25-Apr-06	NEV	8511	851147
			85151	1-Jan-62	25-Apr-06	NEV		851147
		VEHICLE PARKING NON ORGANIZATIONAL	85232	1-Jan-62	25-Apr-06	NEV	8521	852262
		SANITARY SEWAGE MAIN	83200	1-Jan-62	25-Apr-06	NEV	8321	832266
		SANITARY SEWAGE PUMP STATION	83210	1-Jan-66	25-Apr-06	NEV	8316	832267
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	25-Apr-06	NEV	8123	812226
		SEWAGE TREATMENT AND DISPOSAL	83100	1-Jan-62	25-Apr-06	NEV	8311	831165
		SIDEWALK	85200	30-Dec-94	25-Apr-06	NEV	8524	852289
		DUAL MODE ANTENNA (WHITE CONE)	13100	1-Jan-65	25-Apr-06	NEV	1321	132131
		TUNNEL	14981	1-Jan-62	25-Apr-06	NEV	1454	149811
		VEHICLE FUEL STATION	12300	1-Jan-93	25-Apr-06	NEV	1231	123335
		VEHICLE SERVICE RACK	21400	30-Dec-94	25-Apr-06	NEV	2145	214422
		WATER DISTRIBUTION MAIN	84201	1-Jan-62	25-Apr-06	NEV	8421	842245
		WATER STORAGE TANK	84101	1-Jan-66	25-Apr-06	NEV	8413	841427
		WATER SUPPLY TREATMENT	84000	1-Jan-62	25-Apr-06	NEV	8412	841165
Malmstrom AFB • I2 • LF • Site Code NZFL0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87100	30-Dec-62	1-Jan-91	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • I3 • LF • Site Code NZFM0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-91	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • I4 • LF • Site Code NZFN0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-91	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • I5 • LF • Site Code NZFP0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-91	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • I6 • LF • Site Code NZFQ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-92	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-91	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • I7 • LF • Site Code NZFR0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-92	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-91	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • I8 • LF • Site Code NZFS0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-89	1-Jan-89	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-89	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • I9 • LF • Site Code NZFT0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • I10 • LF • Site Code NZFU0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-91	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • I11 • LF • Site Code NZFV0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	1-Jan-91	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-91	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • J1 • MAF • Site Code NZFW0001	**TBD**	CONCRETE BASE FOR MEECN ANTENNA	14100	1-Jun-04	1-Jan-62	NEV	1321	132134
		ANTENNA SUPPORT STRUCTURE	14190	1-Jan-79	1-Jan-62	NEV		132134
		UTILITY LINE DUCTS	89100	30-Dec-62	1-Jan-62	NEV	8932	890181
		WATER SUPPLY BUILDING	2	1-Jan-62	1-Jan-62	NEV	8910	841169
		DIESEL STORAGE	41150	1-Jan-62	1-Jan-62	NEV	4111	411134
		STORM DRAIN DISPOSAL	87100	30-Dec-62	1-Jan-62	NEV	8321	871183
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		FLAG POLE BASE	100	1-Jan-03	1-Jan-62	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	3	1-Jan-66	1-Jan-62	NEV	4425	214426
		HELICOPTER PAD	11661	1-Jan-69	1-Jan-62	NEV	1112	116663
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MISSILE SHAFT ACCESS	14971	1-Jan-62	1-Jan-62	NEV	1453	149711
		MISSILE OPERATIONS BUILDING	1	1-Jan-62	25-Apr-06	NREI	1457	141911
		WATER WELL	84100	1-Jan-61	25-Apr-06	NEV	8414	841166
		ROAD	85130	1-Jan-69	25-Apr-06	NEV	8511	851147
			85150	1-Jan-62	25-Apr-06	NEV		851147
			85151	1-Jan-62	25-Apr-06	NEV		851147
		VEHICLE PARKING NON ORGANIZATIONAL	85232	1-Jan-62	25-Apr-06	NEV	8521	852262
		SANITARY SEWAGE MAIN	83200	1-Jan-62	25-Apr-06	NEV	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	25-Apr-06	NEV	8123	812226
		SECONDARY DISTRIBUTION LINE OVERHEAD	81260	30-Dec-65	25-Apr-06	NEV	8121	812224
		SEWAGE TREATMENT AND DISPOSAL	83100	1-Jan-62	25-Apr-06	NEV	8311	831165
		SIDEWALK	85200	30-Dec-94	25-Apr-06	NEV	8524	852289
		DUAL MODE ANTENNA (WHITE CONE)	13100	1-Jan-65	25-Apr-06	NEV	1321	132131
		TUNNEL	14981	1-Jan-62	25-Apr-06	NEV	1454	149811
		VEHICLE FUEL STATION	12300	1-Jan-93	25-Apr-06	NEV	1231	123335
		WATER DISTRIBUTION MAIN	84201	1-Jan-62	25-Apr-06	NEV	8421	842245
		WATER STORAGE TANK	84101	1-Jan-66	25-Apr-06	NEV	8413	841427
		WATER SUPPLY TREATMENT	84000	1-Jan-62	25-Apr-06	NEV	8412	841165
Malmstrom AFB • J2 • LF • Site Code NZFX0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • J3 • LF • Site Code NZFY0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
		MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • J4 • LF • Site Code NZFZ0001	**TBD**	ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • J5 • LF • Site Code NZGA0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • J6 • LF • Site Code NZGB0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-89	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • J7 • LF • Site Code NZGC0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • J8 • LF • Site Code NZGD0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • J9 • LF • Site Code NZGE0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • J10 • LF • Site Code NZGF0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • J11 • LF • Site Code NZGG0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-91	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • K1 • MAF • Site Code NZGH0001	**TBD**	CONCRETE BASE FOR MEECN ANTENNA	14100	1-Jun-04	1-Jan-62	NEV	1321	132134
		ANTENNA SUPPORT STRUCTURE	14190	1-Jan-79	1-Jan-62	NEV	1321	132134
		UTILITY LINE DUCTS	89100	30-Dec-62	1-Jan-62	NEV	8932	890181
		WATER SUPPLY BUILDING	2	1-Jan-62	1-Jan-62	NEV	8910	841169
		DIESEL STORAGE	41150	1-Jan-62	1-Jan-62	NEV	4111	411134
		STORM DRAIN DISPOSAL	87100	30-Dec-62	1-Jan-62	NEV	8321	871183
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		FLAG POLE BASE	100	1-Jan-03	1-Jan-62	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	3	1-Jan-66	1-Jan-62	NEV	4425	214426
		HELICOPTER PAD	11661	1-Jan-69	1-Jan-62	NEV	1112	116663
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MISSILE SHAFT ACCESS	14971	1-Jan-62	1-Jan-62	NEV	1453	149711
		MISSILE OPERATIONS BUILDING	1	1-Jan-62	25-Apr-06	NREI	1457	141911
		WATER WELL	84100	1-Jan-61	25-Apr-06	NEV	8414	841166
		ROAD	85150	1-Jan-62	25-Apr-06	NEV	8511	851147
			85151	1-Jan-62	25-Apr-06	NEV		851147
		VEHICLE PARKING NON ORGANIZATIONAL	85232	1-Jan-62	25-Apr-06	NEV	8521	852262
		SANITARY SEWAGE MAIN	83200	1-Jan-62	25-Apr-06	NEV	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	25-Apr-06	NEV	8123	812226
		SECONDARY DISTRIBUTION LINE OVERHEAD	81260	30-Dec-65	25-Apr-06	NEV	8121	812224
		SEWAGE TREATMENT AND DISPOSAL	83100	1-Jan-62	25-Apr-06	NEV	8311	831165
		SIDEWALK	85200	30-Dec-94	25-Apr-06	NEV	8524	852289
		SILO, HDANT HF	13100	1-Jan-65	25-Apr-06	NEV	1321	132131
		TUNNEL	14981	1-Jan-62	25-Apr-06	NEV	1454	149811
		VEHICLE FUEL STATION	12300	1-Jan-93	25-Apr-06	NEV	1231	123335
		VEHICLE SERVICE RACK	21400	30-Dec-94	25-Apr-06	NEV	2145	214422
		WATER DISTRIBUTION MAIN	84201	1-Jan-62	25-Apr-06	NEV	8421	842245
		WATER SUPPLY TREATMENT	84000	1-Jan-62	25-Apr-06	NEV	8412	841165
Malmstrom AFB • K10 • LF • Site Code NZGS0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • K11 • LF • Site Code NZGT0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • K2 • LF • Site Code NZGJ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • K3 • LF • Site Code NZGK0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • K4 • LF • Site Code NZGL0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • K5 • LF • Site Code NZGM0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • K6 • LF • Site Code NZGN0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • K7 • LF • Site Code NZGP0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • K8 • LF • Site Code NZGQ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • K9 • LF • Site Code NZGR0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • K10 • LF • Site Code NZGS0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • K11 • LF • Site Code NZGT0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
		CONCRETE BASE FOR MEECN ANTENNA	14100	1-Jun-04	1-Jan-62	NEV	1321	132134
		ANTENNA SUPPORT STRUCTURE	14190	1-Jan-79	1-Jan-62	NEV		132134
		UTILITY LINE DUCTS	89100	30-Dec-62	1-Jan-62	NEV	8932	890181
		WATER SUPPLY BUILDING	2	1-Jan-62	1-Jan-62	NEV	8910	841169

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • L1 • MAF • Site Code NZGU0001	**TBD**	DIESEL STORAGE	41150	1-Jan-62	1-Jan-62	NEV	4111	411134
			41155	1-Jan-64	1-Jan-62	NEV	1243	124134
		STORM DRAIN DISPOSAL	87100	30-Dec-62	1-Jan-62	NEV	8321	871183
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		FLAG POLE BASE	100	1-Jan-03	1-Jan-62	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	3	1-Jan-64	1-Jan-62	NEV	4425	214426
		HELICOPTER PAD	11661	1-Jan-69	1-Jan-62	NEV	1112	116663
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MISSILE SHAFT ACCESS	14971	1-Jan-62	1-Jan-62	NEV	1453	149711
		MISSILE OPERATIONS BUILDING	1	1-Jan-62	25-Apr-06	NREI	1457	141911
		WATER WELL	84100	1-Jan-61	25-Apr-06	NEV	8414	841166
		ROAD	85150	1-Jan-62	25-Apr-06	NEV	8511	851147
			85151	1-Jan-62	25-Apr-06	NEV		851147
		VEHICLE PARKING NON ORGANIZATIONAL	85232	1-Jan-62	25-Apr-06	NEV	8521	852262
		SANITARY SEWAGE MAIN	83200	1-Jan-62	25-Apr-06	NEV	8321	832266
		SANITARY SEWAGE PUMP STATION	83201	1-Jan-67	4-Aug-10	NREI	8316	832267
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	4-Aug-10	NEV	8123	812226
			81260	24-Nov-05	4-Aug-10	NEV	8121	812224
		SEWAGE TREATMENT AND DISPOSAL	83100	1-Jan-62	4-Aug-10	NEV	8311	831165
		SIDEWALK	85200	30-Dec-94	4-Aug-10	NEV	8524	852289
		SILO, HDANT HF	13100	1-Jan-65	4-Aug-10	NEV	1321	132131
		TUNNEL	14981	1-Jan-62	4-Aug-10	NEV	1454	149811
		VEHICLE FUEL STATION	12300	1-Jan-93	4-Aug-10	NEV	1231	123335
		VEHICLE SERVICE RACK	21400	30-Dec-94	4-Aug-10	NEV	2145	214422
		WATER DISTRIBUTION MAIN	84201	1-Jan-62	4-Aug-10	NEV	8421	842245
		WATER SUPPLY TREATMENT	84000	1-Jan-62	4-Aug-10	NEV	8412	841165
Malmstrom AFB • L2 • LF • Site Code NZGV0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • L3 • LF • Site Code NZGW0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • L4 • LF • Site Code NZGX0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
		MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • L5 • LF • Site Code NZGY0001	**TBD**	DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • L6 • LF • Site Code NZGZ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62		NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-89		NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62		NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • L7 • LF • Site Code NZHA0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • L8 • LF • Site Code NZHB0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-02	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • L9 • LF • Site Code NZHC0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • L10 • LF • Site Code NZHD0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • L11 • LF • Site Code NZHE0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • M1 • MAF • Site Code NZHF0001	**TBD**	CONCRETE BASE FOR MEECN ANTENNA	14100	1-Jun-04	1-Jan-62	NEV	1321	132134
		ANTENNA SUPPORT STRUCTURE	14190	1-Jan-79	1-Jan-62	NEV		132134
		UTILITY LINE DUCTS	89100	30-Dec-62	1-Jan-62	NEV	8932	890181
		WATER SUPPLY BUILDING	2	1-Jan-62	1-Jan-62	NEV	8910	841169
		DIESEL STORAGE	41150	1-Jan-62	1-Jan-62	NEV	4111	411134
		STORM DRAIN DISPOSAL	87100	30-Dec-62	1-Jan-62	NEV	8321	871183
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		FLAG POLE BASE	100	1-Jan-03	1-Jan-62	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	3	1-Jan-66	1-Jan-62	NEV	4425	214426
		HELICOPTER PAD	11661	1-Jan-69	1-Jan-62	NEV	1112	116663
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MISSILE SHAFT ACCESS	14971	1-Jan-62	1-Jan-62	NEV	1453	149711
		MISSILE OPERATIONS BUILDING	1	1-Jan-62	25-Apr-06	NREI	1457	141911
		WATER WELL	84100	1-Jan-61	25-Apr-06	NEV	8414	841166
		ROAD	85130	1-Jan-65	25-Apr-06	NEV	8511	851147
			85150	1-Jan-62	25-Apr-06	NEV		851147
			85151	1-Jan-62	25-Apr-06	NEV		851147
		VEHICLE PARKING NON ORGANIZATIONAL	85232	1-Jan-62	25-Apr-06	NEV	8521	852262
		SANITARY SEWAGE MAIN	83200	1-Jan-62	25-Apr-06	NEV	8321	832266
		SANITARY SEWAGE PUMP STATION	83201	1-Jan-68	4-Aug-10	NREI	8316	832267
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	4-Aug-10	NEV	8123	812226
		SECONDARY DISTRIBUTION LINE	81260	24-Nov-05	4-Aug-10	NEV	8121	812224
		SEWAGE TREATMENT AND DISPOSAL	83100	1-Jan-62	4-Aug-10	NEV	8311	831165
		SIDEWALK	85200	30-Dec-94	4-Aug-10	NEV	8524	852289
		SILO, HDANT HF	13100	1-Jan-65	4-Aug-10	NEV	1321	132131
		TUNNEL	14981	1-Jan-62	4-Aug-10	NEV	1454	149811
		VEHICLE FUEL STATION	12300	1-Jan-93	4-Aug-10	NEV	1231	123335
		VEHICLE SERVICE RACK	21400	30-Dec-94	4-Aug-10	NEV	2145	214422
		WATER DISTRIBUTION MAIN	84201	1-Jan-62	4-Aug-10	NEV	8421	842245
		WATER SUPPLY TREATMENT	84000	1-Jan-62	4-Aug-10	NEV	8412	841165
Malmstrom AFB • M10 • LF • Site Code NZHQ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • M11 • LF • Site Code NZHR0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • M2 • LF • Site Code NZHG0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • M3 • LF • Site Code NZHH0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • M4 • LF • Site Code NZHJ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • M5 • LF • Site Code NZHK0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • M6 • LF • Site Code NZHL0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
		MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • M7 • LF • Site Code NZHM0001	**TBD**	DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87100	1-Jan-65	1-Jan-93	NEV	8321	871183
			87110	30-Dec-62	1-Jan-93	NEV		871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • M8 • LF • Site Code NZHN0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • M9 • LF • Site Code NZHP0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • M10 • LF • Site Code NZHQ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	25-Apr-06	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • M11 • LF • Site Code NZHR0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
		CONCRETE BASE FOR MEECN ANTENNA	14100	1-Jun-04	1-Jan-62	NEV	1321	132134
		ANTENNA SUPPORT STRUCTURE	14190	1-Jan-79	1-Jan-62	NEV		132134
		UTILITY LINE DUCTS	89100	30-Dec-62	1-Jan-62	NEV	8932	890181
		WATER SUPPLY BUILDING	2	1-Jan-62	1-Jan-62	NEV	8910	841169
		DIESEL STORAGE	41150	1-Jan-62	1-Jan-62	NEV	4111	411134
		STORM DRAIN DISPOSAL	87100	30-Dec-62	1-Jan-62	NEV	8321	871183
		DRIVEWAY	85201	9-Apr-15	1-Jan-62	NEV	8511	851145

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • N1 • MAF • Site Code NZHS0001	**TBD**	EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		FLAG POLE BASE	100	1-Jan-03	1-Jan-62	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	3	1-Jan-66	1-Jan-62	NEV	4425	214426
			4	9-Apr-15	1-Jan-62	NEV		214426
		HELICOPTER PAD	11661	1-Jan-69	1-Jan-62	NEV	1112	116663
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MISSILE SHAFT ACCESS	14971	1-Jan-62	1-Jan-62	NEV	1453	149711
		MISSILE OPERATIONS BUILDING	1	1-Jan-62	25-Apr-06	NREI	1457	141911
		WATER WELL	84100	1-Jan-61	25-Apr-06	NEV	8414	841166
		ROAD	85130	1-Jan-65	25-Apr-06	NEV	8511	851147
			85150	1-Jan-62	25-Apr-06	NEV		851147
			85151	1-Jan-62	25-Apr-06	NEV		851147
		VEHICLE PARKING NON ORGANIZATIONAL	85232	1-Jan-62	25-Apr-06	NEV	8521	852262
		SANITARY SEWAGE MAIN	83200	1-Jan-62	25-Apr-06	NEV	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	25-Apr-06	NEV	8123	812226
		SECONDARY DISTRIBUTION LINE OVERHEAD	81260	30-Dec-62	25-Apr-06	NEV	8121	812224
		SEWAGE TREATMENT AND DISPOSAL	83100	1-Jan-62	25-Apr-06	NEV	8311	831165
		SIDEWALK	85200	30-Dec-94	25-Apr-06	NEV	8524	852289
		SILO, HDANT HF	13100	1-Jan-65	25-Apr-06	NEV	1321	132131
		TUNNEL	14981	1-Jan-62	25-Apr-06	NEV	1454	149811
		VEHICLE FUEL STATION	12300	1-Jan-93	25-Apr-06	NEV	1231	123335
		VEHICLE SERVICE RACK	21400	30-Dec-94	25-Apr-06	NEV	2145	214422
		WATER DISTRIBUTION MAIN	84201	1-Jan-62	25-Apr-06	NEV	8421	842245
		WATER STORAGE TANK	84101	1-Jan-66	25-Apr-06	NEV	8413	841427
		WATER SUPPLY TREATMENT	84000	1-Jan-62	25-Apr-06	NEV	8412	841165
Malmstrom AFB • N10 • LF • Site Code NZJB0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • N11 • LF • Site Code NZJC0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • N2 • LF • Site Code NZHT0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
		MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-89	1-Jan-89	NEV	4111	411134

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • N3 • LF • Site Code NZHU0001	**TBD**	STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-89	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • N4 • LF • Site Code NZHV0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • N5 • LF • Site Code NZHW0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • N6 • LF • Site Code NZHX0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • N7 • LF • Site Code NZHY0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • N8 • LF • Site Code NZHZ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • N9 • LF • Site Code NZJA0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • N10 • LF • Site Code NZJB0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • N11 • LF • Site Code NZJC0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • O1 • MAF • Site Code NZJD0001	**TBD**	CONCRETE BASE FOR MEECN ANTENNA	14100	1-Jun-04	1-Jan-62	NEV	1321	132134
		ANTENNA SUPPORT STRUCTURE	14190	1-Jan-79	1-Jan-62	NEV		132134
		UTILITY LINE DUCTS	89100	30-Dec-62	1-Jan-62	NEV	8932	890181
		WATER SUPPLY BUILDING	2	1-Jan-62	1-Jan-62	NEV	8910	841169
		DIESEL STORAGE	41150	1-Jan-62	1-Jan-62	NEV	4111	411134
			41155	1-Jan-64	1-Jan-62	NEV	1243	124134
		STORM DRAIN DISPOSAL	87100	30-Dec-62	1-Jan-62	NEV	8321	871183
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		FLAG POLE BASE	100	1-Jan-03	1-Jan-62	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	3	1-Jan-64	1-Jan-62	NEV	4425	214426
		HELICOPTER PAD	11661	1-Jan-71	1-Jan-62	NEV	1112	116663
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MISSILE SHAFT ACCESS	14971	1-Jan-62	1-Jan-62	NEV	1453	149711
		MISSILE OPERATIONS BUILDING	1	1-Jan-62	25-Apr-06	NREI	1457	141911
		WATER WELL	84100	1-Jan-61	25-Apr-06	NEV	8414	841166
		ROAD	85150	1-Jan-62	25-Apr-06	NEV	8511	851147
			85151	1-Jan-62	25-Apr-06	NEV		851147
		VEHICLE PARKING NON ORGANIZATIONAL	85232	1-Jan-62	25-Apr-06	NEV	8521	852262
		SANITARY SEWAGE MAIN	83200	1-Jan-62	25-Apr-06	NEV	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	25-Apr-06	NEV	8123	812226
		SECONDARY DISTRIBUTION LINE OVERHEAD	81260	24-Nov-05	25-Apr-06	NEV	8121	812224
		SEWAGE TREATMENT AND DISPOSAL	83100	1-Jan-62	25-Apr-06	NEV	8311	831165
		SIDEWALK	85200	30-Dec-94	25-Apr-06	NEV	8524	852289
		SILO, HDANT HF	13100	1-Jan-65	25-Apr-06	NEV	1321	132131
		TUNNEL	14981	1-Jan-62	25-Apr-06	NEV	1454	149811
		VEHICLE FUEL STATION	12300	1-Jan-93	25-Apr-06	NEV	1231	123335
		VEHICLE SERVICE RACK	21400	30-Dec-94	25-Apr-06	NEV	2145	214422

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		WATER DISTRIBUTION MAIN	84201	1-Jan-62	25-Apr-06	NEV	8421	842245
		WATER STORAGE TANK	84101	1-Jan-66	25-Apr-06	NEV	8413	841427
		WATER SUPPLY TREATMENT	84000	1-Jan-62	25-Apr-06	NEV	8412	841165
Malmstrom AFB • O2 • LF • Site Code NZJE0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • O3 • LF • Site Code NZJF0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • O4 • LF • Site Code NZJG0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • O5 • LF • Site Code NZJH0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • O6 • LF • Site Code NZJJ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
		MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • O7 • LF • Site Code NZJK0001	**TBD**	EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • O8 • LF • Site Code NZJL0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • O9 • LF • Site Code NZJM0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • O10 • LF • Site Code NZJN0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	1-Jan-62	NEV	8123	812226
Malmstrom AFB • O11 • LF • Site Code NZJP0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89010	30-Dec-62	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	1-Jan-93	1-Jan-93	NEV	4111	411134
		STORM DRAIN DISPOSAL	87110	30-Dec-62	1-Jan-93	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	80000	1-Jan-62	1-Jan-62	DNE	8910	811149
		EXTERIOR AREA LIGHTING	81200	1-Jan-62	1-Jan-62	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-62	1-Jan-62	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	1-Jan-62	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-62	1-Jan-62	NEV	7602	760512
		ROAD	85130	1-Jan-62	1-Jan-62	NEV	8511	851147
		ROAD BRIDGE	85160	31-Dec-62	19-Jul-10	NREI	8513	851142
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81250	1-Jan-62	19-Jul-10	NEV	8123	812226
Malmstrom AFB • P1 • MAF • Site Code NZJR0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • P10 • LF • Site Code NZKA0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • P2 • LF • Site Code NZJS0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • P3 • LF • Site Code NZJT0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • P4 • LF • Site Code NZJU0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • P5 • LF • Site Code NZJV0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • P6 • LF • Site Code NZJW0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
		VEHICLE SERVICE RACK	21400	30-Dec-94	25-Apr-06	NEV	2145	214422
Malmstrom AFB • P7 • LF • Site Code NZJX0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • P8 • LF • Site Code NZJY0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • P9 • LF • Site Code NZJZ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • Q0 • LF • Site Code NZKB0001	**TBD**	CONCRETE BASE FOR MEECN ANTENNA	14100	1-Jun-04	1-Jan-66	NEV	1321	132134
		ANTENNA SUPPORT STRUCTURE	14190	1-Jan-62	1-Jan-66	NEV	1321	132134
		UTILITY LINE DUCTS	89100	30-Dec-62	1-Jan-66	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	1-Jan-66	NEV	1243	124134
			41105	1-Jan-90	1-Jan-66	NEV	1243	124134
			41130	1-Jan-66	1-Jan-66	NEV	1243	124134
		DIRECTION FINDING, UHF	13300	30-Dec-66	1-Jan-66	NEV	1331	133314
		STORM DRAIN DISPOSAL	87100	30-Dec-62	1-Jan-66	NEV	8321	871183
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	1-Jan-66	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	1-Jan-66	NEV	8722	872247
		FLAG POLE BASE	100	1-Jan-03	1-Jan-66	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	3	1-Jan-66	1-Jan-66	NEV	4425	214426
		GUIDED MISSILE LAUNCH CONTROL	14101	1-Jan-66	1-Jan-66	NEV	1457	141175
		HELICOPTER PAD	11661	1-Jan-69	25-Apr-06	NEV	1112	116663
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	25-Apr-06	NEV	1251	125554
		MISSILE SHAFT ACCESS	14970	1-Jan-66	25-Apr-06	NEV	1453	149711
		MOGAS Storage	41101	1-Jan-66	25-Apr-06	NEV	1243	124137
		MISSILE OPERATIONS BUILDING	1	1-Jan-66	25-Apr-06	NREI	1457	141911
		ROAD	85100	1-Jan-66	25-Apr-06	NEV	8511	851147
			85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	85200	1-Jan-66	25-Apr-06	NEV	8521	852262
		SANITARY SEWAGE MAIN	83200	1-Jan-66	25-Apr-06	NEV	8321	832266
		SANITARY SEWAGE PUMP STATION	83300	1-Jan-66	25-Apr-06	NEV	8316	832267

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
		SECONDARY DISTRIBUTION LINE OVERHEAD	81202	24-Nov-05	24-Nov-05	NEV	8121	812224
		SEWAGE TREATMENT AND DISPOSAL	83100	1-Jan-66	24-Nov-05	NEV	8311	831165
		SIDEWALK	85201	30-Dec-94	24-Nov-05	NEV	8524	852289
		SILO, HDANT HF	13100	1-Jan-66	24-Nov-05	NEV	1321	132131
		TUNNEL	14980	1-Jan-66	24-Nov-05	NEV	1454	149811
		VEHICLE FUEL STATION	12300	1-Jan-66	24-Nov-05	NEV	1231	123335
		WATER DISTRIBUTION MAIN	84201	1-Jan-66	24-Nov-05	NEV	8421	842245
		WATER PUMP STATION	84202	1-Jan-66	24-Nov-05	NEV	8422	842249
Malmstrom AFB • Q11 • LF • Site Code NZKC0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • Q12 • LF • Site Code NZKD0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • Q13 • LF • Site Code NZKE0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • Q14 • LF • Site Code NZKF0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	28-Sep-00	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • Q15 • LF • Site Code NZKG0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41150	28-Sep-00	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • Q16 • LF • Site Code NZKH0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • Q17 • LF • Site Code NZKJ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • Q18 • LF • Site Code NZKK0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • Q19 • LF • Site Code NZKL0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • Q20 • LF • Site Code NZKM0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
		CONCRETE BASE FOR MEECN ANTENNA	14100	1-Jun-04	1-Jan-66	NEV	1321	132134
		ANTENNA SUPPORT STRUCTURE	14190	1-Jan-62	1-Jan-66	NEV		132134
		UTILITY LINE DUCTS	89100	30-Dec-62	1-Jan-66	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	1-Jan-66	NEV	1243	124134
			41105	1-Jan-66	1-Jan-66	NEV		124134

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • R0 • LF • Site Code NZKN0001	**TBD**		41130	1-Jan-66	1-Jan-66	NEV		124134
		DIRECTION FINDING, UHF	13300	30-Dec-66	1-Jan-66	NEV	1331	133314
		STORM DRAIN DISPOSAL	87100	1-Jan-66	1-Jan-66	NEV	8321	871183
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	1-Jan-66	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	1-Jan-66	NEV	8722	872247
		FLAG POLE BASE	100	1-Jan-03	1-Jan-66	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	3	1-Jan-66	1-Jan-66	NEV	4425	214426
		GUIDED MISSILE LAUNCH CONTROL	14101	1-Jan-66	1-Jan-66	NEV	1457	141175
		HELICOPTER PAD	11661	1-Jan-69	25-Apr-06	NEV	1112	116663
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	25-Apr-06	NEV	1251	125554
		MISSILE SHAFT ACCESS	14970	1-Jan-66	25-Apr-06	NEV	1453	149711
		MOGAS Storage	41101	1-Jan-66	25-Apr-06	NEV	1243	124137
		MISSILE OPERATIONS BUILDING	1	1-Jan-66	25-Apr-06	NREI	1457	141911
		ROAD	85100	1-Jan-66	25-Apr-06	NEV	8511	851147
			85101	1-Jan-66	25-Apr-06	NEV		851147
		VEHICLE PARKING NON ORGANIZATIONAL	85200	1-Jan-66	25-Apr-06	NEV	8521	852262
		SANITARY SEWAGE MAIN	83200	1-Jan-66	25-Apr-06	NEV	8321	832266
		SANITARY SEWAGE PUMP STATION	83300	1-Jan-66	25-Apr-06	NEV	8316	832267
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
		SECONDARY DISTRIBUTION LINE OVERHEAD	81202	24-Nov-05	25-Apr-06	NEV	8121	812224
		SEWAGE TREATMENT AND DISPOSAL	83100	1-Jan-66	25-Apr-06	NEV	8311	831165
		SIDEWALK	85201	30-Dec-94	25-Apr-06	NEV	8524	852289
		SILO, HDANT HF	13100	1-Jan-66	25-Apr-06	NEV	1321	132131
		TUNNEL	14980	1-Jan-66	25-Apr-06	NEV	1454	149811
		VEHICLE FUEL STATION	12300	1-Jan-66	25-Apr-06	NEV	1231	123335
		WATER DISTRIBUTION MAIN	84201	1-Jan-66	25-Apr-06	NEV	8421	842245
Malmstrom AFB • R21 • LF • Site Code NZKP0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		BOUNDARY FENCE	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • R22 • LF • Site Code NZKQ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • R23 • LF • Site Code NZKR0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
		MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • R24 • LF • Site Code NZKS0001	**TBD**	STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • R25 • LF • Site Code NZKT0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • R26 • LF • Site Code NZKU0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • R27 • LF • Site Code NZKV0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • R28 • LF • Site Code NZKW0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	1-Jan-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • R29 • LF • Site Code NZKX0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • R30 • LF • Site Code NZKY0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • S0 • LF • Site Code NZKZ0001	**TBD**	CONCRETE BASE FOR MEECN ANTENNA	14100	1-Jun-04	1-Jan-66	NEV	1321	132134
		ANTENNA SUPPORT STRUCTURE	14190	1-Jan-62	1-Jan-66	NEV		132134
		UTILITY LINE DUCTS	89100	30-Dec-62	1-Jan-66	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	1-Jan-66	NEV	1243	124134
			41101	1-Jan-94	1-Jan-66	NEV		124134
			41105	1-Jan-66	1-Jan-66	NEV		124134
			41110	1-Jan-94	1-Jan-66	NEV		124137
		DIRECTION FINDING, UHF	13300	30-Dec-66	1-Jan-66	NEV	1331	133314
		STORM DRAIN DISPOSAL	87100	30-Dec-62	1-Jan-66	NEV	8321	871183
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	1-Jan-66	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	1-Jan-66	NEV	8722	872247
		FLAG POLE BASE	100	3-Jan-03	1-Jan-66	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	3	1-Jan-66	1-Jan-66	NEV	4425	214426
		GUIDED MISSILE LAUNCH CONTROL	14101	1-Jan-66	1-Jan-66	DNE	1457	141175
		HELICOPTER PAD	11661	1-Jan-69	25-Apr-06	NEV	1112	116663
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	25-Apr-06	NEV	1251	125554
		MISSILE SHAFT ACCESS	14970	1-Jan-66	25-Apr-06	NEV	1453	149711
		MISSILE OPERATIONS BUILDING	1	1-Jan-66	25-Apr-06	NREI	1457	141911
		ROAD	85100	1-Jan-66	25-Apr-06	NEV	8511	851147
			85101	1-Jan-66	25-Apr-06	NEV		851147
		VEHICLE PARKING NON ORGANIZATIONAL	85200	1-Jan-66	25-Apr-06	NEV	8521	852262
		SANITARY SEWAGE MAIN	83200	1-Jan-66	25-Apr-06	NEV	8321	832266
		SANITARY SEWAGE PUMP STATION	83300	1-Jan-66	25-Apr-06	NEV	8316	832267
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
		SECONDARY DISTRIBUTION LINE OVERHEAD	81202	24-Nov-05	25-Apr-06	NEV	8121	812224
		SEWAGE TREATMENT AND DISPOSAL	83100	1-Jan-66	25-Apr-06	NEV	8311	831165
		SIDEWALK	85201	30-Dec-94	25-Apr-06	NEV	8524	852289
		SILO, HDANT HF	13100	1-Jan-66	25-Apr-06	NEV	1321	132131
		TUNNEL	14980	1-Jan-66	25-Apr-06	NEV	1454	149811
		VEHICLE FUEL STATION	12300	1-Jan-66	25-Apr-06	NEV	1231	123335
		WATER DISTRIBUTION MAIN	84201	1-Jan-66	25-Apr-06	NEV	8421	842245
Malmstrom AFB • S31 • LF • Site Code NZLA0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	1-Jan-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • S32 • LF • Site Code NZLB0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • S33 • LF • Site Code NZLC0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • S34 • LF • Site Code NZLD0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • S35 • LF • Site Code NZLE0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-62	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • S36 • LF • Site Code NZLF0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • S37 • LF • Site Code NZLG0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
		MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • S38 • LF • Site Code NZLH0001	**TBD**	EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • S39 • LF • Site Code NZLJ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • S40 • LF • Site Code NZLK0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • T0 • LF • Site Code NZLL0001	**TBD**	ANTENNA SUPPORT STRUCTURE	14100	1-Jun-04	1-Jan-66	NEV	1321	132134
			14190	1-Jan-62	1-Jan-66	NEV	1321	132134
		UTILITY LINE DUCTS	89100	30-Dec-62	1-Jan-66	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	1-Jan-66	NEV	1243	124134
			41101	1-Jan-66	1-Jan-66	NEV	1243	124137
			41105	1-Jan-66	1-Jan-66	NEV	1243	124134
			41125	1-Jan-67	1-Jan-66	NEV	1243	124134
		DIRECTION FINDING, UHF	13300	30-Dec-66	1-Jan-66	NEV	1331	133314
		STORM DRAIN DISPOSAL	87100	30-Dec-62	1-Jan-66	NEV	8321	871183
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	1-Jan-66	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	1-Jan-66	NEV	8722	872247
		FLAG POLE BASE	100	1-Jan-03	1-Jan-66	NEV	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	3	1-Jan-66	1-Jan-66	NEV	4425	214426
		GUIDED MISSILE LAUNCH CONTROL	14101	1-Jan-66	1-Jan-66	DNE	1457	141175
		HELICOPTER PAD	11661	1-Jan-69	25-Apr-06	NEV	1112	116663
		PIPELINE, LIQUID FUEL	12500	30-Dec-62	25-Apr-06	NEV	1251	125554
		MISSILE SHAFT ACCESS	14970	1-Jan-66	25-Apr-06	NEV	1453	149711
		MISSILE OPERATIONS BUILDING	1	1-Jan-66	25-Apr-06	NREI	1457	141911
		WATER WELL	84100	1-Jan-65	25-Apr-06	NEV	8414	841166
		ROAD	85100	1-Jan-66	25-Apr-06	NEV	8511	851147
			85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	85200	1-Jan-66	25-Apr-06	NEV	8521	852262
		SANITARY SEWAGE MAIN	83200	1-Jan-66	25-Apr-06	NEV	8321	832266
		SANITARY SEWAGE PUMP STATION	83300	1-Jan-66	25-Apr-06	NEV	8316	832267
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
			81202	24-Nov-05	25-Apr-06	NEV	8121	812224
		SEWAGE TREATMENT AND DISPOSAL	83100	1-Jan-66	25-Apr-06	NEV	8311	831165
		SIDEWALK	85201	30-Dec-94	25-Apr-06	NEV	8524	852289
		SILO, HDANT HF	13100	1-Jan-66	25-Apr-06	NEV	1321	132131
		TUNNEL	14980	1-Jan-66	25-Apr-06	NEV	1454	149811
		VEHICLE FUEL STATION	12300	1-Jan-66	25-Apr-06	NEV	1231	123335
		WATER DISTRIBUTION MAIN	84201	1-Jan-66	25-Apr-06	NEV	8421	842245
		WATER PUMP STATION	84202	1-Jan-66	25-Apr-06	NEV	8422	842249

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Malmstrom AFB • T41 • LF • Site Code NZLM0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • T42 • LF • Site Code NZLN0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • T43 • LF • Site Code NZLP0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • T44 • LF • Site Code NZLQ0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • T45 • LF • Site Code NZLR0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • T46 • LF • Site Code NZLS0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • T47 • LF • Site Code NZLT0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • T48 • LF • Site Code NZLU0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • T49 • LF • Site Code NZLV0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226
Malmstrom AFB • T50 • LF • Site Code NZLW0001	**TBD**	MISSILE LAUNCH FACILITY	14900	1-Jan-66	25-Apr-06	NREI	1451	149512
		UTILITY LINE DUCTS	89000	1-Jan-66	25-Apr-06	NEV	8932	890181
		DIESEL STORAGE	41100	1-Jan-66	25-Apr-06	NEV	1243	124134
		STORM DRAIN DISPOSAL	87110	30-Dec-66	25-Apr-06	NEV	8321	871183
		ELECTRIC POWER STATION BUILDING	14100	1-Jan-66	25-Apr-06	NEV	8910	811149
		EXTERIOR AREA LIGHTING	81201	1-Jan-66	25-Apr-06	NEV	8122	812926
		SECURITY FENCE	87201	1-Jan-66	25-Apr-06	NEV	8722	872247
		PIPELINE, LIQUID FUEL	12500	30-Dec-66	25-Apr-06	NEV	1251	125554
		MONUMENT / MEMORIAL	69000	1-Jan-66	25-Apr-06	NEV	7602	760512
		ROAD	85101	1-Jan-66	25-Apr-06	NEV	8511	851147
		SECONDARY DISTRIBUTION LINE UNDERGROUND	81200	1-Jan-66	25-Apr-06	NEV	8123	812226

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • A1 • MAF • Site Code QJWM0001	**TBD**	LAND MOBILE RADIO TOWER	1366	2-Feb-12	2-Feb-12	NCE	1321	132134
		ANTENNA SUPPORT STRUCTURE	1350	1-Jan-77	30-Apr-70	NREC	1321	132134
			1365	1-Jan-70	1-Jan-20	NREC	1321	132134
		BOUNDARY FENCE	8021	1-Jan-63	1-Jan-13	NREC	8721	872245
		COMMUNICATIONS BULDING	3333	30-Jan-19	30-Jan-19	NEV	1311	131118
		DIESEL STORAGE	4001	1-Jan-63	1-Jan-13	NREC	4111	412134
			4181	1-Jan-63	1-Jan-13	NREC	4111	412134
		SECURITY FENCE	8020	1-Jan-63	1-Jan-13	NREC	8722	872247
		FLAG POLE BASE	1800	1-Jan-81	25-Jun-81	NCE	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	2000	1-Jan-66	1-Jan-16	NREC	4425	214426
			3000	21-Aug-01	21-Aug-01	NCE	4425	214426
		GUIDED MISSILE LAUNCH CONTROL	1002	1-Jan-63	17-Nov-20	NREC	1457	141175
		HELICOPTER PAD	1220	1-Jan-69	1-Jan-19	NREC	1112	116663
		MISSILE OPERATIONS BUILDING	1001	1-Jan-63	17-Nov-20	NREC	1457	141911
		WATER WELL	8001	TBD	18-Jan-63	NAR	8414	841166
		ROAD	8023	1-Jan-63	1-Jan-13	NREC	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	8022	1-Jan-63	1-Jan-63	NAR	8521	852262
		SANITARY SEWAGE MAIN	8018	1-Jan-63	1-Jan-63	NAR	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8019	1-Jan-63	1-Jan-63	NAR	8123	812226
		SEPTIC LAGOONS - PONDS	8017	1-Jan-63	1-Jan-13	NREC	8315	831511
			8888	1-Jan-63	1-Jan-63	NAR	8315	831511
		SILO, HDANT HF	1200	1-Jan-65	1-Jan-05	NREC	1321	132131
		TUNNEL	1003	1-Jan-63	1-Jan-13	NREC	1454	149811
		WATER STORAGE TANK	7200	1-Jan-63	2-Feb-63	NREC	8413	841427
		WATER SUPPLY MAINS at MAF	7777	18-Jan-63	18-Jan-63	NAR	8421	841161
Minot AFB • A2 • LF • Site Code QJWN0001	**TBD**	MISSILE LAUNCH FACILITY	1004	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4002	1-Jan-63	14-Oct-63	NAR	4111	412134
		DIRECTION FINDING, UHF	1215	1-Jan-69	23-Jan-69	NREC	1331	133314
		STORM DRAIN DISPOSAL	6500	1-Jan-66	13-Apr-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3110	1-Oct-63	1-Oct-63	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8800	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8026	1-Jan-63	1-Jan-13	NREC	8722	872247
		ROAD	8025	1-Jan-63	1-Jan-13	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7873	1-Jan-63	1-Feb-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8024	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4100	15-May-97	15-May-97	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	1-Jan-63	1-Feb-63	NAR	8522	852263
Minot AFB • A3 • LF • Site Code QJWP0001	**TBD**	MISSILE LAUNCH FACILITY	1005	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4003	1-Jan-63	1-Jan-63	NAR	4111	412134
		DIRECTION FINDING, UHF	1216	1-Jan-69	1-Jan-19	NREC	1331	133314
		STORM DRAIN DISPOSAL	6501	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3111	1-Oct-63	1-Oct-13	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8801	1-Jan-63	1-Jan-13	NREC	8122	812926
		SECURITY FENCE	8029	1-Jan-63	1-Jan-13	NREC	8722	872247
		ROAD	8028	1-Jan-63	1-Jan-13	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7874	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8027	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4101	20-May-97	20-May-97	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	1-Jan-63	2-Feb-63	NAR	8522	852263
		MISSILE LAUNCH FACILITY	1006	1-Jan-63	17-Nov-20	ELPA	1451	149512
		DIESEL STORAGE	4004	1-Jan-63	1-Jan-63	NAR	4111	412134
		DIRECTION FINDING, UHF	1217	1-Jan-69	1-Jan-19	NREC	1331	133314
		STORM DRAIN DISPOSAL	6502	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3112	1-Oct-63	21-Jan-63	NREC	8910	811149

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • A4 • LF • Site Code QJWQ0001	**TBD**	EXTERIOR AREA LIGHTING	8802	1-Jan-63	1-Jan-13	NREC	8122	812926
		SECURITY FENCE	8032	1-Jan-63	1-Jan-13	NREC	8722	872247
		ROAD	8031	1-Jan-63	1-Jan-13	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7875	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8030	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4102	27-May-97	27-May-97	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	1-Jan-63	1-Jan-63	NAR	8522	852263
Minot AFB • A5 • LF • Site Code QJWR0001	**TBD**	MISSILE LAUNCH FACILITY	1007	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4005	1-Jan-63	1-Jan-63	NAR	4111	412134
		DIRECTION FINDING, UHF	1218	1-Jan-69	1-Jan-19	NREC	1331	133314
		STORM DRAIN DISPOSAL	6503	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3113	1-Oct-63	1-Oct-13	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8803	1-Jan-63	1-Jan-13	NREC	8122	812926
		SECURITY FENCE	8035	1-Jan-63	1-Jan-13	NREC	8722	872247
		ROAD	8034	1-Jan-63	1-Jan-13	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7876	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8033	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4103	22-May-97	22-May-97	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	1-Jan-63	1-Jan-63	NAR	8522	852263
Minot AFB • A6 • LF • Site Code QJWS0001	**TBD**	MISSILE LAUNCH FACILITY	1008	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4006	1-Jan-63	1-Jan-63	NAR	4111	412134
		DIRECTION FINDING, UHF	1219	1-Jan-69	1-Jan-19	NREC	1331	133314
		STORM DRAIN DISPOSAL	6504	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3114	1-Oct-63	1-Oct-13	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8804	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8038	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8037	1-Jan-63	1-Jan-13	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7877	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8036	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4104	5-Jun-07	5-Jun-07	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	1-Jan-63	1-Jan-13	NAR	8522	852263
Minot AFB • A7 • LF • Site Code QJWT0001	**TBD**	MISSILE LAUNCH FACILITY	1009	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4007	1-Jan-63	1-Jan-63	NAR	4111	412134
		DIRECTION FINDING, UHF	1220	1-Jan-69	1-Jan-19	NREC	1331	133314
		STORM DRAIN DISPOSAL	6505	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3115	1-Oct-63	1-Oct-13	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8805	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8041	1-Jan-63	1-Jan-13	NREC	8722	872247
		ROAD	8040	1-Jan-63	1-Jan-13	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7878	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8039	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4105	3-Jun-97	3-Jun-97	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	1-Jan-63	1-Jan-63	NAR	8522	852263
Minot AFB • A8 • LF • Site Code QJWU0001	**TBD**	MISSILE LAUNCH FACILITY	1010	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4008	1-Jan-63	30-Apr-63	NAR	4111	412134
		DIRECTION FINDING, UHF	1221	1-Jan-69	1-Jan-19	NREC	1331	133314
		STORM DRAIN DISPOSAL	6506	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3116	1-Oct-63	1-Oct-13	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8806	1-Jan-63	1-Jan-13	NREC	8122	812926
		SECURITY FENCE	8044	1-Jan-63	1-Jan-13	NREC	8722	872247
		ROAD	8043	1-Jan-63	1-Jan-13	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7879	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8040	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4106	10-Jun-97	10-Jun-97	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	1-Jan-63	1-Jan-63	NAR	8522	852263

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • A9 • LF • Site Code QJWV0001	**TBD**	MISSILE LAUNCH FACILITY	1011	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4009	1-Jan-63	1-Jan-63	NAR	4111	412134
		DIRECTION FINDING, UHF	1222	1-Jan-69	1-Jan-19	NREC	1331	133314
		STORM DRAIN DISPOSAL	6507	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3117	1-Oct-63	1-Oct-13	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8807	1-Jan-63	1-Jan-13	NREC	8122	812926
		SECURITY FENCE	8047	1-Jan-63	1-Jan-13	NREC	8722	872247
		ROAD	8046	1-Jan-63	1-Jan-13	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7880	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8045	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4107	5-May-97	5-May-97	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	1-Jan-63	1-Jan-63	NAR	8522	852263
Minot AFB • A10 • LF • Site Code QJWW0001	**TBD**	MISSILE LAUNCH FACILITY	1012	1-Feb-63	17-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4010	1-Jan-63	1-Feb-63	NAR	4111	412134
		DIRECTION FINDING, UHF	1223	1-Jan-69	1-Jan-19	NREC	1331	133314
		STORM DRAIN DISPOSAL	6508	1-Jan-66	13-Apr-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3118	1-Oct-63	1-Oct-13	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8808	1-Jan-63	1-Jan-13	NREC	8122	812926
		SECURITY FENCE	8050	1-Jan-63	1-Feb-13	NREC	8722	872247
		ROAD	8049	1-Jan-63	1-Feb-63	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7881	1-Jan-63	1-Feb-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8048	1-Jan-63	1-Feb-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4108	7-May-97	7-May-97	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	1-Jan-63	19-Jul-18	NAR	8522	852263
Minot AFB • A11 • LF • Site Code QJWX0001	**TBD**	MISSILE LAUNCH FACILITY	1013	1-Jan-63	17-Jan-20	NREC	1451	149512
		DIESEL STORAGE	4011	1-Jan-63	28-Jan-13	NAR	4111	412134
		DIRECTION FINDING, UHF	1224	1-Jan-69	23-Jan-19	NREC	1331	133314
		STORM DRAIN DISPOSAL	6509	1-Jan-66	7-Mar-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3119	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8809	1-Jan-63	28-Jan-13	NREC	8122	812926
		SECURITY FENCE	8053	1-Jan-63	28-Jan-13	NREC	8722	872247
		ROAD	8052	1-Jan-63	28-Jan-13	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7882	1-Jan-63	28-Jan-13	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8051	1-Jan-63	28-Jan-13	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4109	13-May-97	13-May-97	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	1-Jan-63	28-Jan-13	NAR	8522	852263
Minot AFB • B1 • MAF • Site Code QJWY0001	**TBD**	ANTENNA SUPPORT STRUCTURE	1351	1-Jan-77	17-Nov-20	NREC	1321	132134
		ANTENNA SUPPORT STRUCTURE	1366	1-Jan-70	17-Nov-20	NREC	1321	132134
		BOUNDARY FENCE	8059	1-Jan-63	1-Jan-13	NREC	8721	872245
		COMMUNICATIONS BUILDING	3333	30-Jan-19	30-Jan-19	NEV	1311	131118
		DIESEL STORAGE	4012	1-Jan-63	17-Nov-21	NREC	4111	412134
		DIESEL STORAGE	4182	1-Jan-63	17-Nov-20	NREC	4111	412134
		SECURITY FENCE	8058	1-Jan-63	1-Jan-13	NREC	8722	872247
		FLAG POLE BASE	1801	1-Jan-81	1-Jan-81	NREC	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	2001	1-Jan-66	1-Jan-13	NREC	4425	214426
		VEHICLE OPERATIONS HEATED PARKING	3001	21-Aug-01	21-Aug-01	NCE	4425	214426
		GUIDED MISSILE LAUNCH CONTROL	1014	1-Jan-63	1-Jan-13	NREC	1457	141175
		HELICOPTER PAD	1221	1-Jan-69	1-Jan-19	NREC	1112	116663
		MISSILE OPERATIONS BUILDING	1013	1-Jan-63	1-Jan-13	NREC	1457	141911
		WATER WELL	8002	1-Jan-63	1-Jan-63	NAR	8414	841166
		ROAD	8061	1-Jan-63	1-Jan-13	NREC	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	8060	1-Jan-63	1-Jan-63	NAR	8521	852262
		SANITARY SEWAGE MAIN	8056	1-Jan-63	1-Jan-63	NAR	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8057	1-Jan-63	1-Jan-63	NAR	8123	812226

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		SEPTIC LAGOONS - PONDS	8215	1-Jan-63	17-Nov-20	NREC	8315	831511
		SEPTIC LAGOONS - PONDS	8888	2-Feb-64	2-Feb-64	NAR	8315	831511
		SILO, HDANT HF	1201	1-Jan-65	1-Jan-15	NREC	1321	132131
		TUNNEL	1016	1-Jan-63	1-Jan-13	NREC	1454	149811
		WATER STORAGE TANK	7201	1-Jan-63	17-Nov-20	NREC	8413	841427
		WATER SUPPLY MAINS at MAF	7777	1-Jan-63	1-Jan-63	NAR	8421	841161
Minot AFB • B2 • LF • Site Code QJWZ0001	**TBD**	MISSILE LAUNCH FACILITY	1017	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1225	1-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6510	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3120	1-Oct-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8810	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8674	1-Jan-63	17-Nov-20	NREC	8722	872247
		ROAD	8063	1-Jan-63	17-Nov-20	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7883	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8062	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4110	4-Jun-98	4-Jun-98	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	1-Jan-63	1-Jan-63	NAR	8522	852263
Minot AFB • B3 • LF • Site Code QJXA0001	**TBD**	MISSILE LAUNCH FACILITY	1018	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1226	1-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6511	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3121	1-Oct-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8811	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8066	1-Jan-63	17-Nov-20	NREC	8722	872247
		ROAD	8065	1-Jan-63	17-Nov-20	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7884	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8064	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4111	11-Jun-98	11-Jun-98	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	1-Jan-63	1-Jan-63	NAR	8522	852263
Minot AFB • B4 • LF • Site Code QJXB0001	**TBD**	MISSILE LAUNCH FACILITY	1019	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1227	1-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6512	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3122	1-Oct-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8812	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8069	1-Jan-63	17-Nov-20	NREC	8722	872247
		ROAD	8068	1-Jan-63	17-Nov-20	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7885	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8067	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4112	18-Jun-98	18-Jun-98	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	1-Jan-63	1-Jan-63	NAR	8522	852263
Minot AFB • B5 • LF • Site Code QJXC0001	**TBD**	MISSILE LAUNCH FACILITY	1020	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1228	1-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6513	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3123	1-Oct-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8813	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8072	1-Jan-63	17-Nov-20	NREC	8722	872247
		ROAD	8071	1-Jan-63	17-Nov-20	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7886	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8070	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4113	25-Jun-99	25-Jun-99	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	1-Jan-63	1-Jan-63	NAR	8522	852263
		MISSILE LAUNCH FACILITY	1021	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1229	1-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6514	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3124	1-Oct-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8814	1-Jan-63	17-Nov-20	NREC	8122	812926

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • B6 • LF • Site Code QJXD0001	**TBD**	SECURITY FENCE	8075	1-Jan-63	17-Nov-20	NREC	8722	872247
		ROAD	8074	1-Jan-63	17-Nov-20	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7887	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8073	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4114	9-Jul-98	9-Jul-98	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	NAR	8522	852263
Minot AFB • B7 • LF • Site Code QJXE0001	**TBD**	MISSILE LAUNCH FACILITY	1022	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1230	1-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6515	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3125	1-Oct-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8815	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8078	1-Jan-63	17-Nov-20	NREC	8722	872247
		ROAD	8077	1-Jan-63	17-Nov-20	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7888	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8076	(blank)	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4115	13-Aug-98	13-Aug-98	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	NAR	8522	852263
Minot AFB • B8 • LF • Site Code QJXF0001	**TBD**	MISSILE LAUNCH FACILITY	1023	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1231	1-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6516	13-Apr-66	13-Apr-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3126	1-Oct-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8816	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8081	7-Mar-63	17-Nov-20	NREC	8722	872247
		ROAD	8080	(blank)	17-Nov-20	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7889	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8079	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4116	16-Jul-98	16-Jul-98	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	18-Jul-18	18-Jul-18	NAR	8522	852263
Minot AFB • B9 • LF • Site Code QJXG0001	**TBD**	MISSILE LAUNCH FACILITY	1024	7-Mar-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1232	1-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6517	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3127	1-Oct-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8817	7-Mar-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8084	7-Mar-63	17-Nov-20	NREC	8722	872247
		ROAD	8083	(blank)	17-Nov-20	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7890	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8082	(blank)	7-Mar-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4117	23-Jul-98	23-Jul-98	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	18-Jul-18	18-Jul-18	NAR	8522	852263
Minot AFB • B10 • LF • Site Code QJXH0001	**TBD**	MISSILE LAUNCH FACILITY	1025	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1233	1-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6518	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3128	1-Oct-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8818	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8087	1-Jan-63	17-Nov-20	NREC	8722	872247
		ROAD	8086	1-Jan-63	17-Nov-20	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7891	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8085	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4118	30-Jul-98	30-Jul-98	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	1-Jan-63	1-Jan-63	NAR	8522	852263
		MISSILE LAUNCH FACILITY	1026	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1234	1-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6519	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3129	1-Oct-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8819	1-Jan-63	17-Nov-20	NREC	8122	812926

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • B11 • LF • Site Code QJXJ0001	**TBD**	SECURITY FENCE	8090	1-Jan-63	17-Nov-20	NREC	8722	872247
		ROAD	8089	1-Jan-63	1-Jan-13	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7892	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8088	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4119	6-Aug-98	6-Aug-98	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	1-Jan-63	1-Jan-63	NAR	8522	852263
Minot AFB • C1 • MAF • Site Code QJXK0001	**TBD**	LAND MOBILE RADIO TOWER	1368	2-Feb-12	2-Feb-12	NCE	1321	132134
		ANTENNA SUPPORT STRUCTURE	1352	1-Jan-77	17-Nov-20	NREC	1321	132134
			1367	2-Feb-70	17-Nov-20	NREC	1321	132134
		BOUNDARY FENCE	8097	1-Jan-63	17-Nov-20	NREC	8721	872245
		COMMUNICATIONS BUILDING	3333	30-Jan-19	30-Jan-19	NEV	1311	131118
		DIESEL STORAGE	4023	1-Jan-63	17-Nov-20	NREC	4111	412134
			4183	1-Jan-63	17-Nov-20	NREC	4111	412134
		SECURITY FENCE	8096	1-Jan-63	17-Nov-20	NREC	8722	872247
		FLAG POLE BASE	1802	1-Jan-81	1-Jan-81	NCE	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	2002	1-Jan-66	17-Nov-20	NREC	4425	214426
			3002	21-Aug-01	17-Nov-20	NREC	4425	214426
		GUIDED MISSILE LAUNCH CONTROL	1028	1-Jan-63	17-Nov-20	NREC	1457	141175
		HELICOPTER PAD	1222	1-Jan-69	17-Nov-20	NREC	1112	116663
		HELO REFUEL EQUIPMENT GENERATOR PAD	2323	1-Sep-17	1-Sep-17	NAR	8526	132133
			2324	1-Sep-17	1-Sep-17	NAR	8526	132133
		HELO REFUEL EQUIPMENT SIDEWALK	2329	1-Sep-17	1-Sep-17	NAR	8524	852289
		MISSILE OPERATIONS BUILDING	1027	1-Jan-63	17-Nov-20	NREC	1457	141911
		WATER WELL	8003	1-Jan-63	1-Jan-63	NAR	8414	841166
		ROAD	8099	1-Jan-63	17-Nov-20	NREC	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	8098	1-Jan-63	1-Jan-63	NAR	8521	852262
		SANITARY SEWAGE MAIN	8094	1-Jan-63	1-Jan-63	NAR	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8095	1-Jan-63	1-Jan-63	NAR	8123	812226
		SEPTIC LAGOONS - PONDS	8093	1-Jan-63	17-Nov-20	NREC	8315	831511
			8888	1-Jan-63	1-Jan-63	NAR	8315	831511
		SILO, HDANT HF	1202	1-Jan-65	17-Nov-20	NREC	1321	132131
		TUNNEL	1029	1-Jan-63	17-Nov-20	NREC	1454	149811
		WATER STORAGE TANK	7202	1-Jan-63	17-Nov-20	NREC	8413	841427
		WATER SUPPLY MAINS at MAF	7777	1-Jan-63	1-Jan-63	NAR	8421	841161
Minot AFB • C2 • LF • Site Code QJXL0001	**TBD**	MISSILE LAUNCH FACILITY	1030	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1235	1-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6520	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3130	1-Oct-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8820	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8101	1-Jan-63	17-Nov-20	NREC	8722	872247
		ROAD	8100	1-Jan-63	17-Nov-20	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7893	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8092	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4120	21-Aug-98	21-Aug-98	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	NAR	8522	852263
Minot AFB • C3 • LF • Site Code QJXM0001	**TBD**	MISSILE LAUNCH FACILITY	1031	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1236	1-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6521	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3131	1-Oct-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8821	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8104	1-Jan-63	17-Nov-20	NREC	8722	872247
		ROAD	8103	(blank)	17-Nov-20	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7894	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8102	(blank)	20-Mar-63	NAR	8123	812226

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		UNDERGROUND STORAGE TANK	4121	3-Sep-98	3-Sep-98	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	20-Jul-18	20-Jul-18	NAR	8522	852263
Minot AFB • C4 • LF • Site Code QJXN0001	**TBD**	MISSILE LAUNCH FACILITY	1032	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1237	1-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6522	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3132	1-Oct-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8822	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8107	1-Jan-63	17-Nov-20	NREC	8722	872247
		ROAD	8106	1-Jan-63	17-Nov-20	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7895	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8105	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4122	17-Sep-98	17-Sep-98	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	NAR	8522	852263
Minot AFB • C5 • LF • Site Code QJXP0001	**TBD**	MISSILE LAUNCH FACILITY	1033	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1238	1-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6523	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3133	1-Oct-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8823	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8110	1-Jan-63	17-Nov-20	NREC	8722	872247
		ROAD	8109	(blank)	17-Nov-20	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7896	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8108	(blank)	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4123	24-Sep-98	24-Sep-98	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	20-Jul-18	20-Jul-18	NAR	8522	852263
Minot AFB • C6 • LF • Site Code QJXQ0001	**TBD**	MISSILE LAUNCH FACILITY	1034	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1239	1-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6524	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3134	1-Oct-63	15-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8824	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8113	1-Jan-63	17-Nov-20	NREC	8722	872247
		ROAD	8112	(blank)	17-Nov-20	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7897	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8111	(blank)	30-Mar-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4124	9-Jan-98	9-Jan-98	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	20-Jul-18	20-Jul-18	NAR	8522	852263
Minot AFB • C7 • LF • Site Code QJXR0001	**TBD**	MISSILE LAUNCH FACILITY	1035	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1240	1-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6525	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3135	1-Oct-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8825	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8116	1-Jan-63	17-Nov-20	NREC	8722	872247
		ROAD	8115	(blank)	17-Nov-20	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7898	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8114	(blank)	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4125	8-Oct-98	8-Oct-98	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	20-Jul-18	20-Jul-18	NAR	8522	852263
Minot AFB • C8 • LF • Site Code QJXS0001	**TBD**	MISSILE LAUNCH FACILITY	1036	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1241	1-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6526	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3136	1-Oct-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8826	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8119	1-Jan-63	17-Nov-20	NREC	8722	872247
		ROAD	8118	1-Jan-63	17-Nov-20	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7899	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8117	1-Jan-63	1-Jan-63	NAR	8123	812226

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		UNDERGROUND STORAGE TANK	4126	16-Oct-98	16-Oct-98	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	20-Jul-18	20-Jul-18	NAR	8522	852263
Minot AFB • C9 • LF • Site Code QJXT0001	**TBD**	MISSILE LAUNCH FACILITY	1037	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1242	29-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6527	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3137	7-Mar-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8827	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8122	1-Jan-63	17-Nov-20	NREC	8722	872247
		ROAD	8121	1-Jan-63	17-Nov-20	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7900	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8120	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4127	22-Oct-98	22-Oct-98	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	20-Jul-18	20-Jul-18	NAR	8522	852263
Minot AFB • C10 • LF • Site Code QJXU0001	**TBD**	MISSILE LAUNCH FACILITY	1038	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1243	10-Jan-66	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6528	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3138	20-Mar-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8828	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8125	1-Jan-63	17-Nov-20	NREC	8722	872247
		ROAD	8124	(blank)	17-Nov-20	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7901	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8123	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4128	29-Oct-98	29-Oct-98	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	20-Jul-18	20-Jul-18	NAR	8522	852263
Minot AFB • C11 • LF • Site Code QJXV0001	**TBD**	MISSILE LAUNCH FACILITY	1039	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1244	1-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6529	1-Jan-66	1-Jan-66	NAR	8321	871183
		ELECTRIC POWER STATION BUILDING	3139	1-Oct-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8829	1-Jan-63	17-Nov-20	NREC	8122	812926
		SECURITY FENCE	8128	1-Jan-63	17-Nov-20	NREC	8722	872247
		ROAD	8127	1-Jan-63	17-Nov-20	NREC	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7902	1-Jan-63	1-Jan-63	NAR	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8126	1-Jan-63	1-Jan-63	NAR	8123	812226
		UNDERGROUND STORAGE TANK	4129	20-Aug-98	20-Aug-98	NAR	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	20-Jul-18	20-Jul-18	NAR	8522	852263
Minot AFB • D1 • MAF • Site Code QJXW0001	**TBD**	ANTENNA SUPPORT STRUCTURE	1353	1-Jan-77	17-Nov-20	NREC	1321	132134
			1368	1-Jan-70	17-Nov-20	NREC	1321	132134
		BOUNDARY FENCE	8297	1-Jan-63	17-Nov-20	NREC	8721	872245
		COMMUNICATIONS BUILDING	3333	30-Jan-19	30-Jan-19	NEV	1311	131118
		DIESEL STORAGE	4083	1-Jan-63	17-Nov-20	NREC	4111	412134
			4184	1-Jan-63	17-Nov-20	NREC	4111	412134
		SECURITY FENCE	8296	1-Jan-63	17-Nov-20	NREC	8722	872247
		FLAG POLE BASE	1803	1-Jan-81	1-Jan-81	NCE	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	2003	7-Feb-66	17-Nov-20	NREC	4425	214426
			3003	21-Aug-01	21-Aug-01	NCE	4425	214426
		GUIDED MISSILE LAUNCH CONTROL	1095	1-Jan-63	17-Nov-20	NREC	1457	141175
		HELICOPTER PAD	1223	1-Jan-69	1-Jan-19	NREC	1112	116663
		MISSILE OPERATIONS BUILDING	1094	1-Jan-63	17-Nov-20	NREI	1457	141911
		WATER WELL	8004	1-Jan-63	1-Jan-63	NAR	8414	841166
		ROAD	8299	1-Jan-63	17-Nov-20	NREC	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	8298	1-Jan-63	1-Jan-63	NAR	8521	852262
		SANITARY SEWAGE MAIN	8294	1-Jan-63	1-Jan-63	NAR	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8295	1-Jan-63	1-Jan-63	NAR	8123	812226
		SEPTIC LAGOONS - PONDS	8293	1-Jan-63	17-Nov-20	NREC	8315	831511

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		SILO, HDANT HF	1203	1-Jan-65	15-Nov-20	NREC	1321	132131
		TUNNEL	1096	1-Jan-63	17-Nov-20	NREC	1454	149811
		WATER STORAGE TANK	7203	1-Jan-63	17-Nov-20	NREC	8413	841427
		WATER SUPPLY MAINS at MAF	7777	1-Jan-63	1-Jan-63	NAR	8421	841161
Minot AFB • D2 • LF • Site Code QJXX0001	**TBD**	MISSILE LAUNCH FACILITY	1069	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4059	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1245	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6530	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3140	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8830	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8215	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8216	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7903	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8675	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4130	3-Oct-97	3-Oct-97	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • D3 • LF • Site Code QJXY0001	**TBD**	MISSILE LAUNCH FACILITY	1070	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4060	1-Jan-63	17-Nov-20	ELPA	4111	412134
		DIRECTION FINDING, UHF	1246	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6531	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3141	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8831	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8220	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8219	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7904	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8218	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4131	3-Oct-97	3-Oct-97	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • D4 • LF • Site Code QJXZ0001	**TBD**	MISSILE LAUNCH FACILITY	1071	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4061	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1247	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6532	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3142	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8832	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8223	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8222	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7905	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8221	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4132	24-Sep-97	24-Sep-97	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • D5 • LF • Site Code QJYA0001	**TBD**	MISSILE LAUNCH FACILITY	1073	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4063	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1248	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6533	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3143	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8833	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8229	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8225	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7906	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8227	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4133	19-Sep-97	19-Sep-97	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
		MISSILE LAUNCH FACILITY	1077	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4067	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1249	1-Jan-69	1-Jan-19	ELPA	1331	133314

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • D6 • LF • Site Code QJYB0001	**TBD**	STORM DRAIN DISPOSAL	6534	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3144	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8834	1-Jan-63	17-Nov-20	ELPA	8122	812926
		SECURITY FENCE	8241	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8240	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7907	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8239	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4134	12-Sep-97	12-Sep-97	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • D7 • LF • Site Code QJYC0001	**TBD**	MISSILE LAUNCH FACILITY	1078	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4068	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1250	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6535	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3145	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8835	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8244	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8243	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7908	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8242	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4135	10-Sep-97	10-Sep-97	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • D8 • LF • Site Code QJYD0001	**TBD**	MISSILE LAUNCH FACILITY	1082	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4070	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1251	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6536	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3146	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8836	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8255	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8254	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7909	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8253	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4136	4-Sep-97	4-Sep-97	ELPA	4111	412134
Minot AFB • D9 • LF • Site Code QJYE0001	**TBD**	MISSILE LAUNCH FACILITY	1083	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4071	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1252	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6537	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3147	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8837	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8258	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8257	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7910	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8256	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4137	29-Aug-97	17-Nov-20	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • D10 • LF • Site Code QJYF0001	**TBD**	MISSILE LAUNCH FACILITY	1084	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4072	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1253	1-Jan-69	17-Nov-20	NREC	1331	133314
		STORM DRAIN DISPOSAL	6538	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3148	1-Oct-63	17-Nov-20	NREC	8910	811149
		EXTERIOR AREA LIGHTING	8838	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8261	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8260	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7911	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8259	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4138	27-Aug-97	27-Aug-97	ELPA	4111	412134

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • D11 • LF • Site Code QJYG0001	**TBD**	MISSILE LAUNCH FACILITY	1089	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4077	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1254	1-Jan-69	1-Jan-19	NREC	1331	133314
		STORM DRAIN DISPOSAL	6539	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3149	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8839	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8276	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8275	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7912	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8274	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4139	1-Sep-97	1-Sep-97	ELPA	4111	412134
Minot AFB • E1 • MAF • Site Code QJYH0001	**TBD**	ANTENNA SUPPORT STRUCTURE	1354	1-Jan-77	1-Jan-77	ELPA	1321	132134
			1369	1-Jan-70	1-Jan-20	ELPA	1321	132134
		BOUNDARY FENCE	8364	1-Jan-64	1-Jan-14	ELPA	8721	872245
		COMMUNICATIONS BUILDING	3333	30-Jan-19	30-Jan-19	ELPA	1311	131118
		DIESEL STORAGE	4102	1-Jan-64	1-Jan-14	ELPA	4111	412134
			4185	1-Jan-64	1-Jan-14	ELPA	4111	412134
		STORM DRAIN DISPOSAL	1370	2-Feb-12	2-Feb-12	ELPA	1321	132134
		SECURITY FENCE	8363	1-Jan-64	1-Jan-14	ELPA	8722	872247
		FLAG POLE BASE	1804	1-Jan-81	1-Jan-81	ELPA	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	2004	1-Jan-66	1-Jan-16	ELPA	4425	214426
			3004	21-Aug-01	21-Aug-01	ELPA	4425	214426
		GUIDED MISSILE LAUNCH CONTROL	1118	1-Jan-64	1-Jan-14	ELPA	1457	141175
		HELICOPTER PAD	1224	1-Jan-69	1-Jan-19	NREC	1112	116663
		MISSILE OPERATIONS BUILDING	1117	1-Jan-64	1-Jan-14	ELPA	1457	141911
		WATER WELL	8005	1-Jan-63	1-Jan-63	ELPA	8414	841166
		ROAD	8366	1-Jan-64	1-Jan-14	ELPA	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	8365	1-Jan-64	1-Jan-64	ELPA	8521	852262
		SANITARY SEWAGE MAIN	8361	1-Jan-64	1-Jan-64	ELPA	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8362	1-Jan-64	1-Jan-64	ELPA	8123	812226
		SEPTIC LAGOONS - PONDS	8360	1-Jan-64	1-Jan-14	ELPA	8315	831511
			8888	1-Jan-63	1-Jan-13	ELPA	8315	831511
		SILO, HDANT HF	1204	1-Jan-65	1-Jan-15	ELPA	1321	132131
		TUNNEL	1119	1-Jan-64	1-Jan-14	ELPA	1454	149811
		WATER STORAGE TANK	7204	1-Jan-64	1-Jan-64	ELPA	8413	841427
		WATER SUPPLY MAINS at MAF	7777	1-Jan-64	1-Jan-64	ELPA	8421	841161
Minot AFB • E2 • LF • Site Code QJYJ0001	**TBD**	MISSILE LAUNCH FACILITY	1097	1-Jan-64	1-Jan-14	NREC	1451	149512
		DIESEL STORAGE	4084	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1255	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6540	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3150	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8840	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8302	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8301	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7913	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8300	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4140	29-Aug-97	29-Aug-97	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
		MISSILE LAUNCH FACILITY	1093	1-Jan-64	1-Jan-14	NREC	1451	149512
		DIESEL STORAGE	4081	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1256	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6541	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3151	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8841	1-Jan-64	1-Jan-14	ELPA	8122	812926

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • E3 • LF • Site Code QJYK0001	**TBD**	SECURITY FENCE	8288	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8287	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7914	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8286	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4141	13-Aug-97	17-Nov-20	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • E4 • LF • Site Code QJYL0001	**TBD**	MISSILE LAUNCH FACILITY	1098	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4085	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1257	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6542	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3152	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8842	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8305	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8304	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7915	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8303	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4142	7-Aug-97	7-Aug-97	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	1-Sep-17	ELPA	8522	852263
Minot AFB • E5 • LF • Site Code QJYM0001	**TBD**	MISSILE LAUNCH FACILITY	1106	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4091	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1258	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6543	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3153	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8843	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8328	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8327	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7916	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8326	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4143	5-Aug-97	17-Nov-20	ELPA	4111	412134
Minot AFB • E6 • LF • Site Code QJYN0001	**TBD**	MISSILE LAUNCH FACILITY	1105	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4090	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1259	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6544	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3154	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8844	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8325	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8324	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7917	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8323	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4144	1-Aug-97	1-Aug-97	ELPA	4111	412134
Minot AFB • E7 • LF • Site Code QJYP0001	**TBD**	MISSILE LAUNCH FACILITY	1108	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4093	1-Jan-64	1-Jan-64	ELPA	4111	412134
		DIRECTION FINDING, UHF	1260	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6545	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3155	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8845	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8334	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8333	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7918	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8332	1-Jan-64	1-Jan-64	ELPA	8123	812226
		STORM DRAIN PUMP STATION	8950	1-Jan-66	1-Jan-16	ELPA	8924	871185
		UNDERGROUND STORAGE TANK	4145	30-Jul-97	30-Jul-97	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
		MISSILE LAUNCH FACILITY	1110	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4095	1-Jan-64	1-Jan-14	ELPA	4111	412134

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • E8 • LF • Site Code QJYQ0001	**TBD**	DIRECTION FINDING, UHF	1261	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6546	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3156	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8846	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8340	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8339	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7919	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8338	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4146	25-Jul-97	25-Jul-97	ELPA	4111	412134
Minot AFB • E9 • LF • Site Code QJYR0001	**TBD**	MISSILE LAUNCH FACILITY	1111	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4096	1-Jan-64	1-Jan-64	ELPA	4111	412134
		DIRECTION FINDING, UHF	1262	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6547	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3157	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8847	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8343	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8342	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7920	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8341	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4147	23-Jul-97	23-Jul-97	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • E10 • LF • Site Code QJYS0001	**TBD**	MISSILE LAUNCH FACILITY	1129	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4106	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1263	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6548	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3158	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8848	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8393	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8392	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7921	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8391	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4148	17-Jul-97	17-Jul-97	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • E11 • LF • Site Code QJYT0001	**TBD**	MISSILE LAUNCH FACILITY	1130	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4107	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1264	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6549	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3159	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8849	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8396	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8395	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7922	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8394	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4149	10-Jul-97	10-Jul-97	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
		ANTENNA SUPPORT STRUCTURE	1355	1-Jan-77	1-Jan-77	ELPA	1321	132134
			1370	1-Jan-70	1-Jan-20	ELPA	1321	132134
		BOUNDARY FENCE	8134	1-Jan-63	1-Jan-13	ELPA	8721	872245
		COMMUNICATIONS BUILDING	3333	30-Jan-19	30-Sep-10	ELPA	1311	131118
		DIESEL STORAGE	4034	1-Jan-63	1-Jan-13	ELPA	4111	412134
			4186	1-Jan-63	1-Jan-13	ELPA	4111	412134
		STORM DRAIN DISPOSAL	6650	1-Jan-66	1-Jan-66	ELPA	8321	871183
		SECURITY FENCE	8133	1-Jan-63	1-Jan-13	ELPA	8722	872247
		FLAG POLE BASE	1805	1-Jan-81	1-Jan-81	ELPA	6900	690432

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • F1 • MAF • Site Code QJYU0001	**TBD**	VEHICLE OPERATIONS HEATED PARKING	2005	1-Jan-66	1-Jan-16	ELPA	4425	214426
			3005	21-Aug-01	21-Aug-01	ELPA	4425	214426
		GUIDED MISSILE LAUNCH CONTROL	1041	1-Jan-63	1-Jan-13	NREC	1457	141175
		HELICOPTER PAD	1225	1-Jan-69	1-Jan-69	NREC	1112	116663
		MISSILE OPERATIONS BUILDING	1040	1-Jan-63	1-Jun-09	NREC	1457	141911
		WATER WELL	8006	1-Jan-63	1-Jan-63	ELPA	8414	841166
		ROAD	8136	1-Jan-63	1-Jan-13	ELPA	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	8135	1-Jan-63	1-Jan-63	ELPA	8521	852262
		SANITARY SEWAGE MAIN	8131	1-Jan-63	1-Jan-63	ELPA	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8132	1-Jan-63	1-Jan-63	ELPA	8123	812226
		SEPTIC LAGOONS - PONDS	8130	1-Jan-63	1-Jan-13	ELPA	8315	831511
			8888	1-Jan-63	1-Jan-13	ELPA	8315	831511
		SILO, HDANT HF	1205	1-Jan-65	1-Jan-15	ELPA	1321	132131
		TUNNEL	1042	1-Jan-63	1-Jan-13	NREC	1454	149811
		WATER STORAGE TANK	7205	1-Jan-63	17-Nov-20	ELPA	8413	841427
		WATER SUPPLY MAINS at MAF	7777	1-Jan-64	1-Jan-64	ELPA	8421	841161
Minot AFB • F2 • LF • Site Code QJYV0001	**TBD**	MISSILE LAUNCH FACILITY	1043	1-Jan-63	16-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4035	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1265	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6550	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3160	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8850	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8139	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8138	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7923	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8137	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4150	18-Jul-96	18-Jul-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • F3 • LF • Site Code QJYW0001	**TBD**	MISSILE LAUNCH FACILITY	1044	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4036	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1266	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6551	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3161	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8851	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8142	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8141	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7924	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8140	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4151	15-Jul-96	15-Jul-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • F4 • LF • Site Code QJYX0001	**TBD**	MISSILE LAUNCH FACILITY	1045	1-Jan-63	17-Nov-20	ELPA	1451	149512
		DIRECTION FINDING, UHF	1267	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6552	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3162	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8852	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8145	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8144	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7925	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8143	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4152	10-Jul-96	10-Jul-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
		MISSILE LAUNCH FACILITY	1046	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1268	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6553	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3163	1-Oct-63	1-Oct-13	ELPA	8910	811149

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • F5 • LF • Site Code QJYY0001	**TBD**	EXTERIOR AREA LIGHTING	8853	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8148	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8147	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7926	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8146	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4153	23-Jun-97	23-Jun-97	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • F6 • LF • Site Code QJYZ0001	**TBD**	MISSILE LAUNCH FACILITY	1047	1-Jan-63	19-Mar-63	NREC	1451	149512
		DIRECTION FINDING, UHF	1269	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6554	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3164	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8854	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8151	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8150	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7927	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8149	1-Jan-63	1-Jan-63	ELPA	8123	812226
		STORM DRAIN PUMP STATION	8951	1-Jan-66	1-Jan-66	ELPA	8924	871185
		UNDERGROUND STORAGE TANK	4154	27-Jun-97	27-Jun-97	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • F7 • LF • Site Code QJZA0001	**TBD**	MISSILE LAUNCH FACILITY	1048	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4040	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1270	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6555	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3165	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8855	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8154	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8153	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7928	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8152	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4155	3-Jul-97	3-Jul-97	ELPA	4111	412134
Minot AFB • F8 • LF • Site Code QJZB0001	**TBD**	MISSILE LAUNCH FACILITY	1049	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIRECTION FINDING, UHF	1271	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6556	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3166	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8856	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8157	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8156	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7929	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8155	1-Jan-63	1-Jan-63	ELPA	8123	812226
		STORM DRAIN PUMP STATION	8952	1-Jan-66	1-Jan-66	ELPA	8924	871185
		UNDERGROUND STORAGE TANK	4156	8-Oct-96	8-Oct-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • F9 • LF • Site Code QJZC0001	**TBD**	MISSILE LAUNCH FACILITY	1050	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4042	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1272	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6557	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3167	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8857	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8160	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8159	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7930	1-Jan-63	1-Jan-13	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8158	1-Jan-63	1-Jan-63	ELPA	8123	812226
		STORM DRAIN PUMP STATION	8953	1-Jan-66	1-Jan-16	ELPA	8924	871185
		UNDERGROUND STORAGE TANK	4157	10-Oct-96	10-Oct-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • F10 • LF • Site Code QJZD0001	**TBD**	MISSILE LAUNCH FACILITY	1051	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIRECTION FINDING, UHF	1273	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6558	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3168	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8858	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8163	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8162	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7931	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8161	1-Jan-63	1-Jan-63	ELPA	8123	812226
		STORM DRAIN PUMP STATION	8954	1-Jan-66	1-Jan-66	ELPA	8924	871185
		UNDERGROUND STORAGE TANK	4158	7-Oct-96	7-Oct-96	ELPA	4111	412134
Minot AFB • F11 • LF • Site Code QJZE0001	**TBD**	MISSILE LAUNCH FACILITY	1052	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4044	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1274	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6559	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3169	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8859	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8166	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8165	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7932	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8164	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4159	24-Jul-96	24-Jul-96	ELPA	4111	412134
Minot AFB • G1 • MAF • Site Code QJZF0001	**TBD**	LAND MOBILE RADIO TOWER	1372	2-Feb-12	2-Feb-12	ELPA	1321	132134
		ANTENNA SUPPORT STRUCTURE	1356	1-Jan-77	1-Jan-17	ELPA	1321	132134
			1371	1-Jan-70	1-Jan-20	ELPA	1321	132134
		BOUNDARY FENCE	8202	1-Jan-63	1-Jan-13	ELPA	8721	872245
		COMMUNICATIONS BUILDING	3333	30-Jan-19	30-Jan-19	ELPA	1311	131118
		DIESEL STORAGE	4055	1-Jan-63	17-Nov-20	ELPA	4111	412134
			4187	1-Jan-63	1-Jan-13	ELPA	4111	412134
		SECURITY FENCE	8201	1-Jan-63	1-Jan-13	ELPA	8722	872247
		FLAG POLE BASE	1806	1-Jan-81	1-Jan-81	ELPA	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	2006	1-Jan-66	1-Jan-16	ELPA	4425	214426
			3006	21-Aug-01	21-Aug-01	ELPA	4425	214426
		GUIDED MISSILE LAUNCH CONTROL	1064	1-Jan-63	1-Jan-13	NREC	1457	141175
		HELICOPTER PAD	1226	1-Jan-69	1-Jan-19	NREC	1112	116663
		Helo refuel equipment generator pad	2325	1-Sep-17	1-Sep-17	ELPA	8526	132133
			2326	1-Sep-17	1-Sep-17	ELPA	8526	132133
		MISSILE OPERATIONS BUILDING	1063	1-Jan-63	1-Jan-13	NREC	1457	141911
		WATER WELL	8007	1-Jan-63	1-Jan-63	ELPA	8414	841166
		ROAD	8204	1-Jan-63	1-Jan-13	ELPA	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	8203	1-Jan-63	1-Jan-63	ELPA	8521	852262
		SANITARY SEWAGE MAIN	8199	1-Jan-63	1-Jan-63	ELPA	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8200	1-Jan-63	1-Jan-63	ELPA	8123	812226
		SEPTIC LAGOONS - PONDS	8198	1-Jan-63	1-Jan-13	ELPA	8315	831511
			8888	1-Jan-63	1-Jan-13	ELPA	8315	831511
		SILO, HDANT HF	1206	1-Jan-65	1-Jan-15	ELPA	1321	132131
		TUNNEL	1065	1-Jan-63	1-Jan-13	ELPA	1454	149811
		WATER STORAGE TANK	7206	1-Jan-63	1-Jan-63	ELPA	8413	841427
		WATER SUPPLY MAINS at MAF	7777	1-Jan-64	1-Jan-64	ELPA	8421	841161
		MISSILE LAUNCH FACILITY	1053	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4045	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1275	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6560	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3170	1-Oct-63	1-Oct-13	ELPA	8910	811149

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • G2 • LF • Site Code QJZG0001	**TBD**	EXTERIOR AREA LIGHTING	8860	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8169	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8168	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7933	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8167	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4160	31-Jul-96	20-Aug-98	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • G3 • LF • Site Code QJZH0001	**TBD**	MISSILE LAUNCH FACILITY	1054	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4046	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1276	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6561	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3171	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8861	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8172	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8171	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7934	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8170	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4161	26-Jul-96	26-Jul-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • G4 • LF • Site Code QJZJ0001	**TBD**	MISSILE LAUNCH FACILITY	1055	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4047	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1277	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6562	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3172	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8862	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8175	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8174	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7935	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8173	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4162	19-Jun-96	19-Jun-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • G5 • LF • Site Code QJZK0001	**TBD**	MISSILE LAUNCH FACILITY	1056	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4048	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1278	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6563	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3173	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8863	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8178	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8177	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7936	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8176	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4163	13-Jun-96	13-Jun-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • G6 • LF • Site Code QJZL0001	**TBD**	MISSILE LAUNCH FACILITY	1057	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4049	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1279	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6564	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3174	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8864	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8181	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8180	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7937	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8179	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4164	27-Jun-96	27-Jun-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • G7 • LF • Site Code QJZM0001	**TBD**	MISSILE LAUNCH FACILITY	1058	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4050	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1280	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6565	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3175	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8865	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8184	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8183	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7938	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8182	1-Jan-63	1-Jan-63	ELPA	8123	812226
		STORM DRAIN PUMP STATION	8955	1-Jan-66	1-Jan-16	ELPA	8924	871185
		UNDERGROUND STORAGE TANK	4165	2-Jul-96	2-Jul-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • G8 • LF • Site Code QJZN0001	**TBD**	MISSILE LAUNCH FACILITY	1066	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4056	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1281	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6566	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3176	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8866	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8207	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8206	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7939	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8205	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4166	13-Aug-96	13-Aug-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • G9 • LF • Site Code QJZP0001	**TBD**	MISSILE LAUNCH FACILITY	1059	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4051	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1282	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6567	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3177	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8867	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8187	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8186	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7940	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8185	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4167	9-Aug-96	9-Aug-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • G10 • LF • Site Code QJZQ0001	**TBD**	MISSILE LAUNCH FACILITY	1060	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4052	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1283	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6568	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3178	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8868	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8190	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8189	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7941	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8188	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4168	7-Aug-96	7-Aug-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
		MISSILE LAUNCH FACILITY	1061	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4053	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1284	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6569	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3179	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8869	1-Jan-63	1-Jan-13	ELPA	8122	812926

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • G11 • LF • Site Code QJZR0001	**TBD**	SECURITY FENCE	8193	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8192	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7942	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8191	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4169	2-Aug-96	2-Aug-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • H1 • MAF • Site Code QJZS0001	**TBD**	ANTENNA SUPPORT STRUCTURE	1357	1-Jan-77	1-Jan-27	ELPA	1321	132134
			1372	1-Jan-70	1-Jan-20	ELPA	1321	132134
		BOUNDARY FENCE	8311	1-Jan-64	1-Jan-14	ELPA	8721	872245
		COMMUNICATIONS BUILDING	3333	30-Jan-19	30-Jan-19	ELPA	1311	131118
		DIESEL STORAGE	4086	1-Jan-64	1-Jan-14	ELPA	4111	412134
			4188	1-Jan-64	1-Jan-14	ELPA	4111	412134
		SECURITY FENCE	8310	1-Jan-64	1-Jan-14	ELPA	8722	872247
		FLAG POLE BASE	1807	1-Jan-81	1-Jan-81	ELPA	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	2007	1-Jan-66	1-Jan-16	ELPA	4425	214426
			3007	21-Aug-01	21-Aug-01	ELPA	4425	214426
		GUIDED MISSILE LAUNCH CONTROL	1100	1-Jan-64	1-Jan-14	ELPA	1457	141175
		HELICOPTER PAD	1227	1-Jan-69	1-Jan-19	NREC	1112	116663
		MISSILE OPERATIONS BUILDING	1099	1-Jan-64	1-Jan-14	ELPA	1457	141911
		WATER WELL	8008	1-Jan-64	1-Jan-64	ELPA	8414	841166
		ROAD	8313	1-Jan-64	1-Jan-14	ELPA	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	8312	1-Jan-64	1-Jan-64	ELPA	8521	852262
		SANITARY SEWAGE MAIN	8308	1-Jan-64	1-Jan-64	ELPA	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8309	1-Jan-64	1-Jan-64	ELPA	8123	812226
		SEPTIC LAGOONS - PONDS	8307	1-Jan-64	1-Jan-14	ELPA	8315	831511
			8888	1-Jan-63	1-Jan-13	ELPA	8315	831511
		SILO, HDANT HF	1207	1-Jan-65	1-Jan-15	ELPA	1321	132131
		TUNNEL	1101	1-Jan-64	1-Jan-14	ELPA	1454	149811
		WATER STORAGE TANK	7207	1-Jan-64	1-Jan-64	ELPA	8413	841427
		WATER SUPPLY MAINS at MAF	7777	1-Jan-64	1-Jan-64	ELPA	8421	841161
Minot AFB • H2 • LF • Site Code QJZT0001	**TBD**	MISSILE LAUNCH FACILITY	1112	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4097	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1285	1-Jan-69	1-Jan-19	ELPA	1331	133314
		ELECTRIC POWER STATION BUILDING	3180	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8870	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8346	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8345	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7943	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8344	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4170	26-Aug-96	26-Aug-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • H3 • LF • Site Code QJZU0001	**TBD**	MISSILE LAUNCH FACILITY	1085	1-Jan-64	1-Jan-14	NREC	1451	149512
		DIESEL STORAGE	4073	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1286	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6571	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3181	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8871	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8264	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8263	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7944	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8262	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4170	21-Aug-96	21-Aug-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
		MISSILE LAUNCH FACILITY	1090	1-Jan-64	17-Nov-20	NREC	1451	149512

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • H4 • LF • Site Code QJZV0001	**TBD**	DIESEL STORAGE	4078	1-Jan-64	1-Jan-64	ELPA	4111	412134
		DIRECTION FINDING, UHF	1287	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6572	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3182	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8872	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8279	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8278	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7945	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8277	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4172	2-Oct-96	2-Oct-96	ELPA	4111	412134
Minot AFB • H5 • LF • Site Code QJZW0001	**TBD**	MISSILE LAUNCH FACILITY	1102	1-Jan-64	1-Jan-14	NREC	1451	149512
		DIRECTION FINDING, UHF	1288	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6573	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3183	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8873	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8316	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8315	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7946	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8314	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4173	27-Sep-96	27-Sep-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • H6 • LF • Site Code QJZX0001	**TBD**	MISSILE LAUNCH FACILITY	1091	1-Jan-64	1-Jan-14	NREC	1451	149512
		DIESEL STORAGE	4079	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1289	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6574	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3184	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8874	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8282	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8281	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7947	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8280	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4174	12-Sep-96	12-Sep-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • H7 • LF • Site Code QJZY0001	**TBD**	MISSILE LAUNCH FACILITY	1092	1-Jan-64	1-Jan-14	NREC	1451	149512
		DIESEL STORAGE	4080	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1290	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6575	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3185	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8875	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8285	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8284	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7948	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8263	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4175	24-Sep-96	24-Sep-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • H8 • LF • Site Code QJZZ0001	**TBD**	MISSILE LAUNCH FACILITY	1094	1-Jan-64	1-Jan-14	NREC	1451	149512
		DIESEL STORAGE	4082	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1291	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6576	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3186	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8876	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8291	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8290	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7949	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8289	1-Jan-64	1-Jan-64	ELPA	8123	812226

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		UNDERGROUND STORAGE TANK	4176	17-Sep-96	17-Sep-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • H9 • LF • Site Code QKAA0001	**TBD**	MISSILE LAUNCH FACILITY	1103	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4088	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1292	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6577	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3187	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8877	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8319	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8318	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7950	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8317	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4177	10-Sep-96	10-Sep-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • H10 • LF • Site Code QKAB0001	**TBD**	MISSILE LAUNCH FACILITY	1104	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4089	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1293	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6578	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3188	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8878	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8322	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8321	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7951	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8320	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4178	6-Sep-96	6-Sep-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • H11 • LF • Site Code QKAC0001	**TBD**	MISSILE LAUNCH FACILITY	1107	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4092	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1294	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6579	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3189	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8879	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8331	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8330	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7952	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8329	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4179	20-Aug-96	20-Aug-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • I1 • MAF • Site Code QKAD0001	**TBD**	LAND MOBILE RADIO TOWER	1374	2-Feb-12	2-Feb-12	ELPA	1321	132134
		ANTENNA SUPPORT STRUCTURE	1358	1-Jan-77	1-Jan-27	ELPA	1321	132134
			1373	1-Jan-70	1-Jan-20	ELPA	1321	132134
		BOUNDARY FENCE	8372	1-Jan-64	1-Jan-14	ELPA	8721	872245
		COMMUNICATIONS BUILDING	3333	30-Jan-19	30-Jan-19	ELPA	1311	131118
		DIESEL STORAGE	4103	1-Jan-64	14-Nov-20	ELPA	4111	412134
			4189	1-Jan-64	1-Jan-14	ELPA	4111	412134
		SECURITY FENCE	8371	1-Jan-64	1-Jan-14	ELPA	8722	872247
		FLAG POLE BASE	1808	1-Jan-81	1-Jan-81	ELPA	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	2008	1-Jan-66	1-Jan-16	ELPA	4425	214426
			3008	21-Aug-01	21-Aug-01	ELPA	4425	214426
		GUIDED MISSILE LAUNCH CONTROL	1121	1-Jan-64	1-Jan-14	ELPA	1457	141175
		HELICOPTER PAD	1228	1-Jan-69	1-Jan-19	NREC	1112	116663
		MISSILE OPERATIONS BUILDING	1120	1-Jan-64	1-Jun-09	ELPA	1457	141911
		WATER WELL	8009	1-Jan-63	1-Jan-63	ELPA	8414	841166
		ROAD	8374	1-Jan-64	1-Jan-14	ELPA	8511	851147

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		VEHICLE PARKING NON ORGANIZATIONAL	8373	1-Jan-64	1-Jan-64	ELPA	8521	852262
		SANITARY SEWAGE MAIN	8369	1-Jan-64	1-Jan-64	ELPA	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8370	1-Jan-64	1-Jan-64	ELPA	8123	812226
		SEPTIC LAGOONS - PONDS	8368	1-Jan-64	1-Jan-14	ELPA	8315	831511
			8888	1-Jan-63	1-Jan-13	ELPA	8315	831511
		SILO, HDANT HF	1208	1-Jan-65	1-Jan-15	ELPA	1321	132131
		TUNNEL	1122	1-Jan-64	1-Jan-14	ELPA	1454	149811
		WATER STORAGE TANK	7208	1-Jan-64	1-Jan-64	ELPA	8413	841427
		WATER SUPPLY MAINS at MAF	7777	1-Jan-64	1-Jan-64	ELPA	8421	841161
Minot AFB • I2 • LF • Site Code QKAE0001	**TBD**	MISSILE LAUNCH FACILITY	1131	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4108	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1295	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6580	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3190	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8880	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8399	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8398	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7953	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8397	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4180	1-Oct-96	1-Oct-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • I3 • LF • Site Code QKAF0001	**TBD**	MISSILE LAUNCH FACILITY	1155	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4132	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1296	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6581	1-Jan-66	1-Jan-16	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3191	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8881	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8471	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8470	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7954	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8469	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4181	17-Sep-96	17-Sep-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • I4 • LF • Site Code QKAG0001	**TBD**	MISSILE LAUNCH FACILITY	1132	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4109	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1297	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6582	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3192	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8882	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8402	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8401	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7955	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8400	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4182	13-Sep-96	13-Sep-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • I5 • LF • Site Code QKAH0001	**TBD**	MISSILE LAUNCH FACILITY	1133	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4110	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1298	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6583	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3193	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8883	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8405	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8404	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7956	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8403	1-Jan-64	1-Jan-64	ELPA	8123	812226

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		UNDERGROUND STORAGE TANK	4183	11-Sep-96	11-Sep-16	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • I6 • LF • Site Code QKAJ0001	**TBD**	MISSILE LAUNCH FACILITY	1134	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4111	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1299	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6584	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3194	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8884	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8408	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8407	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7957	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8406	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4184	5-Sep-96	5-Sep-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • I7 • LF • Site Code QKAK0001	**TBD**	MISSILE LAUNCH FACILITY	1135	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4112	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1300	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6585	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3195	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8885	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8411	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8410	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7958	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8409	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4185	4-Sep-96	4-Sep-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • I8 • LF • Site Code QKAL0001	**TBD**	MISSILE LAUNCH FACILITY	1136	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4113	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1301	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6586	1-Jan-66	1-Jan-16	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3196	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8886	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8414	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8413	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7959	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8412	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4186	28-Aug-96	28-Aug-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • I9 • LF • Site Code QKAM0001	**TBD**	MISSILE LAUNCH FACILITY	1137	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4114	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1302	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6587	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3197	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8887	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8417	1-Jan-64	1-Oct-14	ELPA	8722	872247
		ROAD	8416	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7960	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8415	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4187	26-Aug-96	26-Aug-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
		MISSILE LAUNCH FACILITY	1138	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4115	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1303	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6588	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3198	1-Oct-64	1-Oct-14	ELPA	8910	811149

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • I10 • LF • Site Code QKAN0001	**TBD**	EXTERIOR AREA LIGHTING	8888	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8420	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8419	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7961	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8418	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4188	20-Aug-96	20-Aug-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • I11 • LF • Site Code QKAP0001	**TBD**	MISSILE LAUNCH FACILITY	1139	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4116	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1304	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6589	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3199	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8889	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8423	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8422	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7962	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8421	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4189	20-Aug-96	20-Aug-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • J1 • MAF • Site Code QKAQ0001	**TBD**	LAND MOBILE RADIO TOWER	1375	2-Feb-12	2-Feb-12	ELPA	1321	132134
		ANTENNA SUPPORT STRUCTURE	1359	1-Jan-77	1-Jan-27	ELPA	1321	132134
			1374	1-Jan-70	1-Jan-20	ELPA	1321	132134
		BOUNDARY FENCE	8520	1-Jan-64	1-Jan-14	ELPA	8721	872245
		COMMUNICATIONS BUILDING	3333	30-Jan-19	30-Jan-19	ELPA	1311	131118
		DIESEL STORAGE	4147	1-Jan-64	1-Jan-14	ELPA	4111	412134
			4190	1-Jan-64	1-Jan-14	ELPA	4111	412134
		SECURITY FENCE	8519	1-Jan-64	1-Jan-14	ELPA	8722	872247
		FLAG POLE BASE	1809	1-Jan-81	1-Jan-81	ELPA	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	2009	1-Jan-66	1-Jan-16	ELPA	4425	214426
			3009	21-Aug-01	21-Aug-01	ELPA	4425	214426
		GUIDED MISSILE LAUNCH CONTROL	1170	1-Jan-64	1-Jan-14	ELPA	1457	141175
		HELICOPTER PAD	1229	1-Jan-69	1-Jan-19	NREC	1112	116663
		MISSILE OPERATIONS BUILDING	1171	1-Jan-64	1-Jan-14	ELPA	1457	141911
		WATER WELL	8010	1-Jan-63	1-Jan-63	ELPA	8414	841166
		ROAD	8522	1-Jan-64	1-Jan-14	ELPA	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	8521	1-Jan-64	1-Jan-14	ELPA	8521	852262
		SANITARY SEWAGE MAIN	8517	1-Jan-64	1-Jan-64	ELPA	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8518	1-Jan-64	1-Jan-64	ELPA	8123	812226
		SEPTIC LAGOONS - PONDS	8516	1-Jan-64	1-Jan-14	ELPA	8315	831511
			8888	1-Jan-63	1-Jan-13	ELPA	8315	831511
		SILO, HDANT HF	1209	1-Jan-65	1-Jan-15	ELPA	1321	132131
		TUNNEL	1172	1-Jan-64	1-Jan-14	ELPA	1454	149811
		WATER STORAGE TANK	7209	1-Jan-64	1-Jan-64	ELPA	8413	841427
		WATER SUPPLY MAINS at MAF	7777	1-Jan-64	1-Jan-64	ELPA	8421	841161
Minot AFB • J2 • LF • Site Code QKAR0001	**TBD**	MISSILE LAUNCH FACILITY	1164	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4141	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1305	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6590	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3200	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8890	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8498	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8497	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7963	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8496	1-Jan-64	1-Jan-64	ELPA	8123	812226

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		UNDERGROUND STORAGE TANK	4190	11-Oct-96	17-Nov-20	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • J3 • LF • Site Code QKAS0001	**TBD**	MISSILE LAUNCH FACILITY	1165	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4142	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1306	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6591	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3201	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8891	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8501	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8500	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7964	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8499	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4191	30-Oct-96	30-Oct-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • J4 • LF • Site Code QKAT0001	**TBD**	MISSILE LAUNCH FACILITY	1166	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4143	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1307	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6592	1-Jan-66	3-May-21	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3202	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8892	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8505	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8503	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7965	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8502	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4192	30-Apr-97	30-Apr-97	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • J5 • LF • Site Code QKAU0001	**TBD**	MISSILE LAUNCH FACILITY	1167	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4144	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1308	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6593	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3203	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8893	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8508	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8507	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7966	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8506	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4193	28-Apr-97	28-Apr-97	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • J6 • LF • Site Code QKAV0001	**TBD**	MISSILE LAUNCH FACILITY	1156	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4133	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1309	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6594	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3204	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8894	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8474	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8473	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7967	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8472	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4194	25-Oct-96	25-Oct-96	ELPA	4111	412134
		MISSILE LAUNCH FACILITY	1157	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4134	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1310	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6595	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3205	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8895	1-Jan-64	1-Jan-14	ELPA	8122	812926

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • J8 LF • Site Cod QKAW0001		SECURITY FENCE	8477	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8476	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7968	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8475	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4195	10-Oct-96	10-Oct-96	ELPA	4111	412134
Minot AFB • J8 • LF • Site Code QKAX0001	**TBD**	MISSILE LAUNCH FACILITY	1158	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4135	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1311	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6596	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3206	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8896	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8480	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8479	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7969	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8478	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4196	24-Sep-96	24-Sep-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • J9 • LF • Site Code QKAY0001	**TBD**	MISSILE LAUNCH FACILITY	1161	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4138	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1312	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6597	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3207	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8897	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8489	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8488	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7970	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8487	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4197	15-Oct-96	15-Oct-96	ELPA	4111	412134
Minot AFB • J10 • LF • Site Code QKAZ0001		MISSILE LAUNCH FACILITY	1162	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4139	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1313	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6598	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3208	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8898	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8492	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8491	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7971	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8490	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4198	30-Sep-96	30-Sep-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • J11 • LF • Site Code QKBA0001	**TBD**	MISSILE LAUNCH FACILITY	1169	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4146	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1314	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6599	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3209	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8899	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8514	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8513	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7972	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8512	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4199	7-Oct-96	7-Oct-96	ELPA	4111	412134
		LAND MOBILE RADIO TOWER	1377	2-Feb-12	2-Feb-12	ELPA	1321	132134
		ANTENNA SUPPORT STRUCTURE	1360	1-Jan-77	17-Nov-20	ELPA	1321	132134
			1375	1-Jan-70	1-Jan-20	ELPA	1321	132134

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • K1 • MAF • Site Code QKBB0001	**TBD**		1376	1-Jan-70	1-Jan-20	ELPA	1321	132134
		BOUNDARY FENCE	8250	1-Jan-63	1-Jan-13	ELPA	8721	872245
		COMMUNICATIONS BUILDING	3333	30-Jan-19	30-Jan-19	ELPA	1311	131118
		DIESEL STORAGE	4069	1-Jan-63	1-Jan-13	ELPA	4111	412134
			4191	1-Jan-63	1-Jan-13	ELPA	4111	412134
		SECURITY FENCE	8249	1-Jan-63	1-Jan-13	ELPA	8722	872247
		FLAG POLE BASE	1810	1-Jan-81	1-Jan-81	ELPA	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	2010	1-Jan-66	1-Jan-16	ELPA	4425	214426
			3010	21-Aug-01	21-Aug-01	ELPA	4425	214426
		GUIDED MISSILE LAUNCH CONTROL	1080	1-Jan-63	1-Jan-13	NREC	1457	141175
		HELICOPTER PAD	1230	1-Jan-69	1-Jan-19	NREC	1112	116663
		MISSILE OPERATIONS BUILDING	1079	1-Jan-63	1-Jan-13	NREC	1457	141911
		WATER WELL	8011	1-Jan-63	(blank)	NEV	8414	841166
		ROAD	8252	1-Jan-63	1-Jan-13	ELPA	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	8251	1-Jan-63	1-Jan-63	ELPA	8521	852262
		SANITARY SEWAGE MAIN	8247	1-Jan-63	1-Jan-63	ELPA	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8248	1-Jan-63	1-Jan-63	ELPA	8123	812226
		SEPTIC LAGOONS - PONDS	8246	1-Jan-63	1-Jan-13	ELPA	8315	831511
			8888	1-Jan-63	1-Jan-63	ELPA	8315	831511
		SILO, HDANT HF	1210	1-Jan-65	1-Jan-15	ELPA	1321	132131
		TUNNEL	1081	1-Jan-63	1-Jan-13	NREC	1454	149811
		WATER STORAGE TANK	7210	1-Jan-63	1-Jan-63	ELPA	8413	841427
		WATER SUPPLY MAINS at MAF	7777	1-Jan-64	1-Jan-64	ELPA	8421	841161
Minot AFB • K2 • LF • Site Code QKBC0001	**TBD**	MISSILE LAUNCH FACILITY	1074	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4064	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1315	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6600	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3210	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8900	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8232	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8231	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7973	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8230	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4200	13-Jun-96	17-Nov-20	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • K3 • LF • Site Code QKBD0001	**TBD**	MISSILE LAUNCH FACILITY	1075	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4065	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1316	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6601	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3211	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8901	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8235	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8234	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7974	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8233	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4201	18-Jul-96	18-Jul-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • K4 • LF • Site Code QKBE0001	**TBD**	MISSILE LAUNCH FACILITY	1067	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4057	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1317	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6602	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3212	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8902	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8210	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8209	1-Jan-63	1-Jan-13	ELPA	8512	851201

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7975	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8208	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4202	26-Jul-96	26-Jul-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • K5 • LF • Site Code QKBF0001	**TBD**	MISSILE LAUNCH FACILITY	1086	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4074	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1318	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6603	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3213	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8903	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8267	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8266	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7976	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8265	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4203	21-Oct-96	21-Oct-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	3-May-21	ELPA	8522	852263
Minot AFB • K6 • LF • Site Code QKBG0001	**TBD**	MISSILE LAUNCH FACILITY	1087	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4075	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1319	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6604	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3214	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8904	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8270	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8269	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7977	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8268	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4204	15-Jul-96	15-Jul-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • K7 • LF • Site Code QKBH0001	**TBD**	MISSILE LAUNCH FACILITY	1072	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4062	1-Jan-63	1-Jan-63	ELPA	4111	412134
		DIRECTION FINDING, UHF	1320	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6605	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3215	1-Oct-63	1-Jan-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8905	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8226	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8225	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7978	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8224	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4205	22-Jul-96	22-Jul-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • K8 • LF • Site Code QKBJ0001	**TBD**	MISSILE LAUNCH FACILITY	1068	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4058	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1321	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6606	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3216	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8906	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8214	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8213	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7979	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8211	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4206	24-Jul-96	24-Jul-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
		MISSILE LAUNCH FACILITY	1062	1-Jan-63	1-Jan-13	NREC	1451	149512
		DIESEL STORAGE	4054	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1322	1-Jan-69	1-Jan-19	ELPA	1331	133314

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • K9 • LF • Site Code QKBK0001	**TBD**	STORM DRAIN DISPOSAL	6607	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3217	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8907	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8196	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8195	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7980	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8194	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4207	28-Jun-96	28-Jun-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • K10 • LF • Site Code QKBL0001	**TBD**	MISSILE LAUNCH FACILITY	1076	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4066	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1323	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6608	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3218	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8908	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8238	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8237	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7981	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8236	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4208	26-Jun-96	26-Jun-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • K11 • LF • Site Code QKBM0001	**TBD**	MISSILE LAUNCH FACILITY	1088	1-Jan-63	17-Nov-20	NREC	1451	149512
		DIESEL STORAGE	4076	1-Jan-63	1-Jan-13	ELPA	4111	412134
		DIRECTION FINDING, UHF	1324	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6609	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3219	1-Oct-63	1-Oct-13	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8909	1-Jan-63	1-Jan-13	ELPA	8122	812926
		SECURITY FENCE	8273	1-Jan-63	1-Jan-13	ELPA	8722	872247
		ROAD	8272	1-Jan-63	1-Jan-13	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7982	1-Jan-63	1-Jan-63	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8271	1-Jan-63	1-Jan-63	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4209	10-Jul-96	10-Jul-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • L1 • MAF • Site Code QKBN0001	**TBD**	ANTENNA SUPPORT STRUCTURE	1361	1-Jan-77	1-Jan-20	ELPA	1321	132134
			1377	1-Jan-70	1-Jan-20	ELPA	1321	132134
		BOUNDARY FENCE	8380	1-Jan-64	1-Jan-14	ELPA	8721	872245
		COMMUNICATIONS BUILDING	3333	30-Jan-19	30-Jan-19	ELPA	1311	131118
		DIESEL STORAGE	4104	1-Jan-64	1-Jan-14	ELPA	4111	412134
			4192	1-Jan-64	1-Jan-14	ELPA	4111	412134
		SECURITY FENCE	8379	1-Jan-64	1-Jan-14	ELPA	8722	872247
		FLAG POLE BASE	1811	1-Jan-81	1-Jan-81	ELPA	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	2011	1-Jan-66	1-Jan-16	ELPA	4425	214426
			3011	21-Aug-01	21-Aug-01	ELPA	4425	214426
		GUIDED MISSILE LAUNCH CONTROL	1124	1-Jan-64	1-Jan-14	ELPA	1457	141175
		HELICOPTER PAD	1231	1-Jan-69	1-Jan-19	NREC	1112	116663
		MISSILE OPERATIONS BUILDING	1123	1-Jan-64	1-Jan-14	ELPA	1457	141911
		WATER WELL	8012	1-Jan-63	1-Jan-63	ELPA	8414	841166
		ROAD	8382	1-Jan-64	1-Jan-14	ELPA	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	8381	1-Jan-64	1-Jan-64	ELPA	8521	852262
		SANITARY SEWAGE MAIN	8377	1-Jan-64	1-Jan-64	ELPA	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8378	1-Jan-64	1-Jan-64	ELPA	8123	812226
		SEPTIC LAGOONS - PONDS	8376	1-Jan-64	1-Jan-14	ELPA	8315	831511
			8888	1-Jan-63	1-Jan-63	ELPA	8315	831511
		SILO, HDANT HF	1211	1-Jan-65	1-Jan-15	ELPA	1321	132131

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		TUNNEL	1125	1-Jan-64	1-Jan-14	ELPA	1454	149811
		WATER STORAGE TANK	7211	1-Jan-64	1-Jan-64	ELPA	8413	841427
		WATER SUPPLY MAINS at MAF	7777	1-Jan-64	1-Jan-64	ELPA	8421	841161
Minot AFB • L2 • LF • Site Code QKBP0001	**TBD**	MISSILE LAUNCH FACILITY	1140	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4117	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1325	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6610	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3220	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8910	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8426	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8425	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7983	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8424	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4210	2-Jan-95	2-Jan-95	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • L3 • LF • Site Code QKBQ0001	**TBD**	MISSILE LAUNCH FACILITY	1141	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4118	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1326	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6611	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3221	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8911	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8429	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8428	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7984	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8427	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4211	2-Jan-95	2-Jan-95	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • L4 • LF • Site Code QKBR0001	**TBD**	MISSILE LAUNCH FACILITY	1142	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4119	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1327	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6612	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3222	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8912	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8432	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8431	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7985	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8430	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4212	16-Oct-95	16-Oct-95	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • L5 • LF • Site Code QKBS0001	**TBD**	MISSILE LAUNCH FACILITY	1143	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4120	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1328	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6613	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3223	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8913	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8435	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8434	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7986	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8433	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4213	16-Oct-95	17-Nov-20	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
		MISSILE LAUNCH FACILITY	1109	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4094	1-Jan-64	1-Jan-64	ELPA	4111	412134
		DIRECTION FINDING, UHF	1329	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6614	1-Jan-66	1-Jan-66	ELPA	8321	871183

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • L6 • LF • Site Code QKBT0001	**TBD**	ELECTRIC POWER STATION BUILDING	3224	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8914	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8337	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8336	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7987	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8335	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4214	8-Aug-96	8-Aug-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • L7 • LF • Site Code QKBU0001	**TBD**	MISSILE LAUNCH FACILITY	1113	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4098	1-Jan-64	1-Jan-64	ELPA	4111	412134
		DIRECTION FINDING, UHF	1330	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6615	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3225	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8915	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8349	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8348	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7988	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8347	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4215	14-Jun-96	14-Jun-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • L8 • LF • Site Code QKBV0001	**TBD**	MISSILE LAUNCH FACILITY	1114	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4099	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1331	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6616	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3226	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8916	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8352	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8351	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7989	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8350	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4216	21-Jun-96	17-Nov-20	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • L9 • LF • Site Code QKBW0001	**TBD**	MISSILE LAUNCH FACILITY	1115	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4100	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1332	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6617	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3227	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8917	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8355	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8354	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7990	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8353	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4217	7-Jun-96	7-Jun-96	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • L10 • LF • Site Code QKBX0001	**TBD**	MISSILE LAUNCH FACILITY	1116	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4101	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1333	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6618	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3228	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8918	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8358	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8357	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7991	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8356	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4218	15-Nov-95	15-Nov-95	ELPA	4111	412134

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • L11 • LF • Site Code QKBY0001	**TBD**	MISSILE LAUNCH FACILITY	1144	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIESEL STORAGE	4121	1-Jan-64	1-Jan-14	ELPA	4111	412134
		DIRECTION FINDING, UHF	1334	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6619	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3229	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8919	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8438	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8437	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7992	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8436	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4219	9-Nov-95	9-Nov-95	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • M1 • MAF • Site Code QKCP0001	**TBD**	ANTENNA SUPPORT STRUCTURE	1362	1-Jan-77	1-Jan-77	ELPA	1321	132134
			1378	1-Jan-70	1-Jan-20	ELPA	1321	132134
		BOUNDARY FENCE	8388	1-Jan-64	1-Jan-14	ELPA	8721	872245
		COMMUNICATIONS BUILDING	3333	30-Jan-19	30-Jan-19	ELPA	1311	131118
		DIESEL STORAGE	4105	1-Jan-64	1-Jan-14	ELPA	4111	412134
			4193	1-Jan-64	1-Jan-14	ELPA	4111	412134
		SECURITY FENCE	8387	1-Jan-64	1-Jan-14	ELPA	8722	872247
		FLAG POLE BASE	1812	1-Jan-81	1-Jan-81	ELPA	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	2012	1-Jan-66	1-Jan-16	ELPA	4425	214426
			3012	21-Aug-01	21-Aug-01	ELPA	4425	214426
		GUIDED MISSILE LAUNCH CONTROL	1127	1-Jan-64	1-Jan-14	ELPA	1457	141175
		HELICOPTER PAD	1232	1-Jan-69	1-Jan-19	NREC	1112	116663
		HELO REFUEL EQUIPMENT GENERATOR PAD	2327	1-Sep-17	1-Sep-17	ELPA	8526	132133
			2328	1-Sep-17	1-Sep-17	ELPA	8526	132133
		HELO REFUEL EQUIPMENT SIDEWLAK	2331	1-Sep-17	1-Sep-17	ELPA	8524	852289
		MISSILE OPERATIONS BUILDING	1126	1-Jan-64	1-Jan-14	ELPA	1457	141911
		WATER WELL	8013	1-Jan-64	1-Jan-64	ELPA	8414	841166
		ROAD	8390	1-Jan-64	1-Jan-14	ELPA	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	8389	1-Jan-64	1-Jan-64	ELPA	8521	852262
		SANITARY SEWAGE MAIN	8385	1-Jan-64	1-Jan-64	ELPA	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8386	1-Jan-64	1-Jan-64	ELPA	8123	812226
		SEPTIC LAGOONS - PONDS	8384	1-Jan-64	1-Jan-14	ELPA	8315	831511
			8888	1-Jan-63	1-Jan-63	ELPA	8315	831511
		SILO, HDANT HF	1212	1-Jan-65	1-Jan-15	ELPA	1321	132131
		TUNNEL	1128	1-Jan-64	1-Jan-14	ELPA	1454	149811
		WATER STORAGE TANK	7212	1-Jan-64	1-Jan-64	ELPA	8413	841427
		WATER SUPPLY MAINS at MAF	7777	1-Jan-64	1-Jan-64	ELPA	8421	841161
Minot AFB • M2 • LF • Site Code QKCQ0001	**TBD**	MISSILE LAUNCH FACILITY	1145	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1335	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6620	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3230	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8920	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8441	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8440	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7993	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8439	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4220	22-Sep-93	22-Sep-93	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
		MISSILE LAUNCH FACILITY	1146	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1336	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6621	1-Jan-66	1-Jan-66	ELPA	8321	871183

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • M3 • LF • Site Code QKCR0001	**TBD**	ELECTRIC POWER STATION BUILDING	3231	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8921	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8444	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8443	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7994	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8442	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4221	17-Sep-93	17-Nov-20	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • M4 • LF • Site Code QKCS0001	**TBD**	MISSILE LAUNCH FACILITY	1147	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1337	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6622	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3232	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8922	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8447	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8446	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7995	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8445	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4222	12-May-94	12-May-94	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • M5 • LF • Site Code QKCT0001	**TBD**	MISSILE LAUNCH FACILITY	1148	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1338	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6623	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3233	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8923	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8450	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8449	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7996	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8448	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4223	11-Nov-93	11-Nov-93	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • M6 • LF • Site Code QKCU0001	**TBD**	MISSILE LAUNCH FACILITY	1149	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1339	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6624	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3234	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8924	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8453	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8452	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7997	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8451	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4224	11-May-94	11-May-94	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • M7 • LF • Site Code QKCV0001	**TBD**	MISSILE LAUNCH FACILITY	1150	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1340	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6625	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3235	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8925	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8456	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8455	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7998	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8454	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4225	3-Nov-93	3-Nov-93	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
		MISSILE LAUNCH FACILITY	1151	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1341	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6626	1-Jan-66	1-Jan-66	ELPA	8321	871183

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • M8 • LF • Site Code QKCW0001	**TBD**	ELECTRIC POWER STATION BUILDING	3236	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8926	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8459	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8458	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	7999	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8457	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4226	26-Oct-93	26-Oct-93	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • M9 • LF • Site Code QKCX0001	**TBD**	MISSILE LAUNCH FACILITY	1152	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1342	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6627	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3237	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8927	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8462	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8461	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8000	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8460	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4227	18-Oct-93	18-Oct-93	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • M10 • LF • Site Code QKCY0001	**TBD**	MISSILE LAUNCH FACILITY	1153	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1343	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6628	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3238	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8928	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8465	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8464	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8001	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8463	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4228	7-Oct-93	7-Oct-93	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • M11 • LF • Site Code QKCZ0001	**TBD**	MISSILE LAUNCH FACILITY	1154	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1344	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6629	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3239	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8929	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8468	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8467	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8002	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8466	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4229	30-Sep-93	30-Sep-93	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • N1 • MAF • Site Code QKDA0001	**TBD**	LAND MOBILE RADIO TOWER	1380	2-Feb-12	2-Feb-12	ELPA	1321	132134
		ANTENNA SUPPORT STRUCTURE	1363	1-Jan-77	1-Jan-77	ELPA	1321	132134
			1379	1-Jan-70	1-Jan-20	ELPA	1321	132134
		BOUNDARY FENCE	8681	1-Jan-64	1-Jan-14	ELPA	8721	872245
		COMMUNICATIONS BUILDING	3333	30-Jan-19	30-Jan-19	ELPA	1311	131118
		DIESEL STORAGE	4149	1-Jan-64	1-Jan-14	ELPA	4111	412134
			4194	1-Jan-64	1-Jan-14	ELPA	4111	412134
		SECURITY FENCE	8680	1-Jan-64	1-Jan-14	ELPA	8722	872247
		FLAG POLE BASE	1813	1-Jan-81	1-Jan-81	ELPA	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	2013	1-Jan-66	1-Jan-16	ELPA	4425	214426
			3013	21-Aug-01	21-Aug-01	ELPA	4425	214426
		GUIDED MISSILE LAUNCH CONTROL	1190	1-Jan-64	1-Jan-14	ELPA	1457	141175
		HELICOPTER PAD	1233	1-Jan-69	1-Jan-19	NREC	1112	116663

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		MISSILE OPERATIONS BUILDING	1189	1-Jan-64	1-Jan-14	ELPA	1457	141911
		WATER WELL	8014	1-Jan-63	1-Jan-63	ELPA	8414	841166
		ROAD	8683	1-Jan-64	1-Jan-14	ELPA	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	8682	1-Jan-64	1-Jan-64	ELPA	8521	852262
		SANITARY SEWAGE MAIN	8678	1-Jan-64	1-Jan-64	ELPA	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8679	1-Jan-64	1-Jan-64	ELPA	8123	812226
		SEPTIC LAGOONS - PONDS	8677	1-Jan-64	1-Jan-14	ELPA	8315	831511
			8888	1-Jan-64	1-Jan-64	ELPA	8315	831511
		SILO, HDANT HF	1213	1-Jan-65	1-Jan-15	ELPA	1321	132131
		TUNNEL	1191	1-Jan-64	1-Jan-14	ELPA	1454	149811
		WATER STORAGE TANK	7213	1-Jan-64	1-Jan-64	ELPA	8413	841427
		WATER SUPPLY MAINS at MAF	7777	1-Jan-64	1-Jan-64	ELPA	8421	841161
Minot AFB • N2 • LF • Site Code QKDB0001	**TBD**	MISSILE LAUNCH FACILITY	1174	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1345	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6630	1-Jan-66	3-May-21	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3240	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8930	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8686	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8685	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8003	1-Jan-64	3-May-21	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8684	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4230	8-Jun-92	8-Jun-92	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • N3 • LF • Site Code QKDC0001	**TBD**	MISSILE LAUNCH FACILITY	1175	1-Jan-64	17-Nov-20	ELPA	1451	149512
		DIRECTION FINDING, UHF	1346	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6631	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3241	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8931	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8689	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8688	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8004	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8687	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4231	22-May-92	22-May-92	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • N4 • LF • Site Code QKDE0001	**TBD**	MISSILE LAUNCH FACILITY	1176	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1347	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6632	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3242	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8932	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8692	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8691	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8005	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8690	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4232	15-Nov-91	15-Nov-91	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • N5 • LF • Site Code QKDF0001	**TBD**	MISSILE LAUNCH FACILITY	1177	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1348	1-Jan-69	1-Jan-19	ELPA	1331	133314
		ELECTRIC POWER STATION BUILDING	3243	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8933	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8695	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8694	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8006	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8693	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4233	17-Oct-91	17-Oct-91	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • N6 • LF • Site Code QKDG0001	**TBD**	MISSILE LAUNCH FACILITY	1173	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1349	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6634	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3244	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8934	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8525	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8524	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8007	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8523	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4234	2-Oct-91	2-Oct-91	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • N7 • LF • Site Code QKDH0001	**TBD**	MISSILE LAUNCH FACILITY	1163	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1350	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6635	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3245	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8935	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8495	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8494	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8008	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8493	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4235	11-Sep-91	17-Nov-20	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • N8 • LF • Site Code QKDJ0001	**TBD**	MISSILE LAUNCH FACILITY	1168	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1351	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6636	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3246	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8936	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8511	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8510	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8009	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8509	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4236	30-Jun-92	30-Jun-92	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • N9 • LF • Site Code QKDK0001	**TBD**	MISSILE LAUNCH FACILITY	1159	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1352	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6637	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3247	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8937	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8483	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8482	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8010	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8481	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4237	17-Jul-92	17-Jul-92	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • N10 • LF • Site Code QKDL0001	**TBD**	MISSILE LAUNCH FACILITY	1160	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1353	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6638	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3248	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8938	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8486	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8485	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8011	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8484	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4238	6-Jul-92	6-Jul-92	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
Minot AFB • N11 • LF • Site Code QKDN0001	**TBD**	MISSILE LAUNCH FACILITY	1178	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1354	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6639	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3249	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8939	1-Jan-64	17-Nov-20	ELPA	8122	812926
		SECURITY FENCE	8698	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8697	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8012	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8696	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4239	23-Jun-92	23-Jun-92	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • O1 • MAF • Site Code QKDP0001	**TBD**	ANTENNA SUPPORT STRUCTURE	1364	1-Jan-77	1-Jan-27	ELPA	1321	132134
			1380	1-Jan-70	1-Jan-20	ELPA	1321	132134
		BOUNDARY FENCE	8704	1-Jan-64	1-Jan-14	ELPA	8721	872245
		COMMUNICATIONS BUILDING	3333	30-Jan-19	30-Jan-19	ELPA	1311	131118
		DIESEL STORAGE	4155	1-Jan-64	1-Jan-14	ELPA	4111	412134
			4195	1-Jan-64	1-Jan-14	ELPA	4111	412134
		SECURITY FENCE	8703	1-Jan-64	1-Jan-14	ELPA	8722	872247
		FLAG POLE BASE	1814	1-Jan-81	1-Jan-81	ELPA	6900	690432
		VEHICLE OPERATIONS HEATED PARKING	2014	1-Jan-66	1-Jan-16	ELPA	4425	214426
			3014	21-Aug-01	21-Aug-01	ELPA	4425	214426
		GUIDED MISSILE LAUNCH CONTROL	1180	1-Jan-64	1-Jan-14	ELPA	1457	141175
		HELICOPTER PAD	1234	1-Jan-69	1-Jan-19	NREC	1112	116663
		MISSILE OPERATIONS BUILDING	1179	1-Jan-64	1-Jan-14	ELPA	1457	141911
		WATER WELL	8015	1-Jan-63	1-Jan-63	ELPA	8414	841166
		ROAD	8706	1-Jan-64	1-Jan-14	ELPA	8511	851147
		VEHICLE PARKING NON ORGANIZATIONAL	8705	1-Jan-64	1-Jan-14	ELPA	8521	852262
		SANITARY SEWAGE MAIN	8701	1-Jan-64	1-Jan-14	ELPA	8321	832266
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8702	1-Jan-64	1-Jan-14	ELPA	8123	812226
		SEPTIC LAGOONS - PONDS	8700	1-Jan-64	1-Jan-14	ELPA	8315	831511
		SEWAGE SEPTIC TANK	8888	1-Jan-64	1-Jan-64	ELPA	8315	831511
		SILO, HDANT HF	1214	1-Jan-65	1-Jan-15	ELPA	1321	132131
		TUNNEL	1181	1-Jan-64	1-Jan-14	ELPA	1454	149811
		WATER STORAGE TANK	7214	1-Jan-64	1-Jan-14	ELPA	8413	841427
		WATER SUPPLY MAINS at MAF	7777	1-Jan-64	1-Jan-64	ELPA	8421	841161
Minot AFB • O2 • LF • Site Code QKDQ0001	**TBD**	MISSILE LAUNCH FACILITY	1179	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1355	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6640	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3250	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8940	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8709	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8708	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8013	1-Jan-64	3-May-21	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8707	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4240	29-Jul-93	29-Jul-93	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	27-Sep-18	19-Jul-18	ELPA	8522	852263
Minot AFB • O3 • LF • Site Code QKDR0001	**TBD**	MISSILE LAUNCH FACILITY	1180	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1356	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6641	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3251	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8941	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8712	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8711	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8014	1-Jan-64	1-Jan-64	ELPA	8123	812225

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8710	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4241	15-Jul-93	15-Jul-93	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	27-Sep-18	19-Jul-18	ELPA	8522	852263
Minot AFB • O4 • LF • Site Code QKDS0001	**TBD**	MISSILE LAUNCH FACILITY	1181	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1357	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6642	1-Jan-66	3-May-21	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3252	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8942	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8715	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8714	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8015	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8713	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4242	8-Jul-93	8-Jul-93	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	27-Sep-18	19-Jul-18	ELPA	8522	852263
Minot AFB • O5 • LF • Site Code QKDT0001	**TBD**	MISSILE LAUNCH FACILITY	1182	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1358	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6643	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3253	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8943	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8718	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8717	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8016	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8716	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4243	10-Sep-93	10-Sep-93	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	18-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • O6 • LF • Site Code QKDU0001	**TBD**	MISSILE LAUNCH FACILITY	1183	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1359	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6644	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3254	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8944	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8721	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8720	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8017	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8719	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4244	29-Jun-93	29-Jun-93	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • O7 • LF • Site Code QKDV0001	**TBD**	MISSILE LAUNCH FACILITY	1184	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1360	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6645	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3255	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8945	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8724	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8723	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8018	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8722	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4245	16-Sep-93	16-Sep-93	ELPA	4111	412134
Minot AFB • O8 • LF • Site Code QKDW0001	**TBD**	MISSILE LAUNCH FACILITY	1185	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1361	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6646	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3256	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8946	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8727	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8726	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8019	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8725	1-Jan-64	1-Jan-64	ELPA	8123	812226

Facility & Site Code	State Trinomial ID	Facility Description	Facility Number	Placed In Service Date	Historic Status Date	Current Historic Status Code	FAC Code	CAT Code
		UNDERGROUND STORAGE TANK	4246	30-Aug-93	30-Aug-93	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	27-Sep-18	19-Jul-18	ELPA	8522	852263
Minot AFB • O9 • LF • Site Code QKDX0001	**TBD**	MISSILE LAUNCH FACILITY	1186	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1362	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6647	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3257	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8947	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8730	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8729	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8020	1-Jan-64	1-Jan-14	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8728	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4247	23-Aug-93	23-Aug-93	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	19-Jul-18	19-Jul-18	ELPA	8522	852263
Minot AFB • O10 • LF • Site Code QKDY0001	**TBD**	MISSILE LAUNCH FACILITY	1187	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1363	1-Jan-69	1-Jan-19	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6648	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3258	1-Oct-64	1-Jan-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8948	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8733	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8732	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8021	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8731	1-Jan-64	1-Jan-64	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4248	16-Aug-93	16-Aug-93	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	27-Sep-18	19-Jul-18	ELPA	8522	852263
Minot AFB • O11 • LF • Site Code QKDZ0001	**TBD**	MISSILE LAUNCH FACILITY	1188	1-Jan-64	1-Jan-14	ELPA	1451	149512
		DIRECTION FINDING, UHF	1364	1-Jan-69	1-Jan-14	ELPA	1331	133314
		STORM DRAIN DISPOSAL	6649	1-Jan-66	1-Jan-66	ELPA	8321	871183
		ELECTRIC POWER STATION BUILDING	3259	1-Oct-64	1-Oct-14	ELPA	8910	811149
		EXTERIOR AREA LIGHTING	8949	1-Jan-64	1-Jan-14	ELPA	8122	812926
		SECURITY FENCE	8736	1-Jan-64	1-Jan-14	ELPA	8722	872247
		ROAD	8735	1-Jan-64	1-Jan-14	ELPA	8512	851201
		PRIMARY DISTRIBUTION UNDERGROUND LINE	8022	1-Jan-64	1-Jan-64	ELPA	8123	812225
		SECONDARY DISTRIBUTION LINE UNDERGROUND	8734	1-Jan-64	1-Jan-14	ELPA	8123	812226
		UNDERGROUND STORAGE TANK	4249	5-Aug-93	5-Aug-93	ELPA	4111	412134
		VEHICLE PARKING AND STAGING AREA	2222	27-Sep-18	19-Jul-18	ELPA	8522	852263

APPENDIX D
State Agencies, Local Governments, and Nongovernmental Organizations Invited to Consult on Development of this Programmatic Agreement

State Agencies, Local Governments, and Nongovernmental Organizations Invited to Consult on Development of this Programmatic Agreement

State Agencies

Colorado Department of Natural Resources, State Board of Land Commissioners
Colorado Department of Transportation, Environmental Programs Branch

Montana Department of Natural Resources and Conservation, Trust Lands Management Division
Montana Department of Transportation, Environmental Services Bureau
Montana Department of Natural Resources and Conservation, Water Resources Division, State Water Projects Bureau

Nebraska Board of Educational Lands and Funds
Nebraska Department of Transportation, Environmental Section

North Dakota Department of Trust Lands
North Dakota Department of Transportation
North Dakota Game and Fish

Wyoming Office of State Lands and Investments, Trust Land Management Division
Wyoming Department of Transportation, Environmental Services
Wyoming State Parks, Historic Sites, and Trails

Local Governments

Colorado

Logan County	Town of Grover
Weld County	Town of New Raymer

Montana

Cascade County	Town of Cascade
Chouteau County	City of Choteau
Fergus County	Town of Denton
Judith Basin County	Town of Grass Range
Lewis & Clark County	City of Great Falls
Meagher County	Town of Harlowton
Teton County	Town of Judith Gap
Wheatland County	City of Lewistown
	City of Stanford
	Town of Winifred

Nebraska

Banner County	Village of Potter
Cheyenne County	City of Sidney
Kimball County	

North Dakota

Bottineau County	City of Berthold
Burke County	City of Bowbells
McHenry County	City of Garrison
McLean County	City of Kenmare
Mountrail County	City of Mohall
Renville County	City of Parshall
Sheridan County	City of Plaza
Ward County	City of Ross
	City of Ryder
	City of Tolley
	City of Velva

Wyoming

Goshen County	City of Cheyenne
Laramie County	

Non-governmental Organizations

Alliance for Historic Wyoming

Association of Air Force Missileers

Lewis and Clark Trust, Inc.
Lewis and Clark Trail Heritage Foundation, Inc.

Mormon Trails Association

National Pony Express Association (NPEA)
NPEA, Nebraska Division

National Trust for Historic Preservation

Oregon California Trail Association (OCTA)
Wyoming Chapter, OCTA
Nebraska Chapter, OCTA

APPENDIX E
Tribal Consultation Protocols

TRIBAL CONSULTATION PROTOCOLS

Federal recognition of Nation-to-Nation consultation requirements and Tribal knowledge/ expertise is included in the following (among many others):

- National Historic Preservation Act (NHPA) (1966, as amended)
- 36 C.F.R. Part 800, *Protection of Historic Properties* (as amended) (2004)
- Executive Order (EO) 13007, *Indian Sacred Sites* (1996)
- EO 13175, *Consultation and Coordination with Indian Tribal Governments* (2000)
- Department of Defense Instruction 4710.02, *DoD Interactions with Federally Recognized Tribes* (2018)
- Department of the Air Force Instruction 90-2002, *Interactions with Federally Recognized Tribes* (2020)
- Air Force Manual 32-7003, *Environmental Conservation* (2020)
- United Nations Declaration on the Rights of Indigenous Peoples (2007)

Advisory Council on Historic Preservation Guidance and Information Papers Related to Federal-Tribal Coordination

- Traditional Knowledge and the Section 106 Process: Information for Federal Agencies and Other Participants (2021)
- Recommendations for Improving Tribal-Federal Consultation (2015)
- Tribal Treaty Rights in the Section 106 Process (2018)
- Information Paper on Cultural Landscapes (2016)
- Protection of Indian Sacred Sites: General Information July 2015
- Native American Program Fact Sheet
- Relationship Between EO 13007 Regarding Indian Sacred Sites and Section 106 (2018)
- Consultation Process Pursuant to EO 13175 (2017)
- The Advisory Council on Historic Preservation's Statement on its Trust Responsibility (2004)

The Tribal consultation protocols presented in this Appendix were developed during government-to-government consultation on this Agreement for compliance with Section 106 of the NHPA. DAF understands and acknowledges the significance of government-to-government consultation regarding areas of concern to Tribes, i.e., land management, climate change, environmental justice, and the health and safety of Native American communities, which may or may not fall within conventional Section 106 processes.

Procedural Protocols – The basic tenets within which Tribal consultation shall be initiated and conducted.

- The United States government owes a general trust responsibility to Tribes to protect their resources during federal actions, afforded them as both U.S. citizens and as members of self-governing, sovereign nations. For the Air Force, the *Department of Defense (DoD) American Indian and Alaska Native Policy* (2007) established principles for working with Tribes, based on Tribal input, federal policy, treaties, and federal statutes.
- All Parties shall respect the Tribe's right to self-government and sovereignty, shall acknowledge and abide by the treaties between the United States and the Tribes, if/as applicable to specific Sentinel Project areas, and shall consult in a meaningful manner that strengthens the government-to-government relationship between the Tribes and DAF.

- It is understood that Tribes have the right to participate in legal processes that involve areas not under their direct control, and that documentary evidence does not have to be provided to support Tribal ancestral affiliation, nor can the lack of such evidence be used to deny a Tribe the opportunity to participate in consultation.
- Tribes have the right to be consulted in the areas of ancestral domain, intellectual property, land rights, language, traditional knowledge, and treaty rights, and it is understood that concerns related to these areas may be expressed by Tribes during consultation.
- Tribes have a deep connection to the landscape and possess historic knowledge passed through generations that uniquely enables them to identify sites of spiritual, cultural, and historic interest. DAF acknowledges the special expertise of Tribes, including Traditional Knowledge, and incorporates that expertise into their Section 106 decision making processes for identifying, evaluating, assessing, and resolving adverse effects to properties of religious and cultural significance to Tribes, as required in 36 C.F.R. § 800.4I(1) of the NHPA implementing regulations.
- It is understood that properties of religious and cultural importance to a Tribe may be determined eligible for inclusion in the National Register of Historic Places (National Register), and that the knowledge and expertise brought to the process by Tribes can be the basis for identifying such historic properties. However, such properties must meet the criteria in 36 C.F.R. § 60.4 to be eligible for listing.
- Information that a Tribe considers as intellectual property or traditional knowledge may not be suitable for dissemination beyond the Tribe itself or specified agency representatives. The Parties understand that some information gathered by Tribes for site/area identification and evaluation may not be appropriate to be provided in writing and that Tribes are not required to disclose this type of information to the DAF, even as regards evidence for determinations of eligibility for the National Register.
- The Parties understand that Tribes may differ in their evaluation and interpretation of sites identified during the Sentinel Project. Should varying interpretations arise, DAF will consult with the involved Parties to resolve both the assessment of effects to the site and allowable dissemination of information.
- Tribes often consider areas where there may be potential effects to a property to involve more than a width-times-length footprint on the earth; effects can be multi-dimensional, and the Parties understand that varying perspectives should be expected and taken into consideration during planning and consultation.
- The consultation process shall commence as early as possible when as yet unidentified actions or consultation components are identified throughout the life of the Sentinel Project. All parties shall agree to respect and comply with document review and comment processes as outlined in the Agreement in order to maintain planning, implementation, and construction schedules. No party shall unreasonably move to terminate consultation as long as these protocols are in-force and are being upheld.
- The Parties understand that the majority of the steps regarding Tribal involvement in the consultation process for compliance with Section 106 of the NHPA are outlined in the applicable Stipulation sections of the Agreement.

Cultural Understanding Protocols – Achieving meaningful and effective Tribal consultation.

- Meaningful and effective Tribal consultation, at a minimum, requires a different way of thinking and understanding. It is an ongoing conversation that takes into account types of projects and direct, indirect, and cumulative effects; it considers site-level and regional landscapes and past consultation agreements; it recognizes Tribal traditions and multiple layers of significance. As such, it is imperative that relationship-building be at the center of all consultation efforts, and it is understood that such efforts require time, trust, and respect.
- Tribal consultation is a mindset that must engender awareness and a willingness to work together to navigate a workable approach in defining ways to identify, record, understand, and protect places of religious, traditional, and sacred importance to Tribes.
- Cultural resources are revered by Tribes as a connection to their past, and are important to their cultural identity, sense of self, and future well-being. Cultural resources are tied to people's ancestors, some related to important religious aspects, and many have ongoing spiritual connections.
- Tribes have concerns regarding many types of cultural resources, preservation of sacred places, continuing destruction of places and things of cultural value, and the effects of this destruction on their cultural identity. DAF recognizes the presence and importance of these remnants from the past to aboriginal people living today.
- Air and land are considered Tribal cultural resources unto themselves, and water is often viewed as medicine. These resources are vital to Tribal spiritual practices, culture, and health, and must be honored and protected.
- The Parties understand that there are different ways to communicate and convey relevant information to achieve a proper understanding of each other's point, and that all manner of cultural speaking practices will be respected.
- Many Tribes practice reciprocity, which means that if human remains are unearthed, something must be given back to restore balance. There are consequences dictated by the Universe for disturbing graves and other elements of Tribal cultural patrimony, and as such known burial/grave areas must be avoided to the greatest extent possible.
- The Parties agree to respect the practice of making offerings and understand that shared meals are customary and may be expected.

Behavioral Protocols – Effective and respectful communication and contribution.

- The Parties shall respect each other's diversity, and shall speak with courtesy, dignity, care, and moderation to maintain an amicable atmosphere in all consultation efforts. Particular attention will be paid to the level of respect afforded Tribal elders.
- The Parties shall refrain from interrupting an individual who is speaking, shall avoid the use of language of dominance and/or oppression, shall refrain from disruptive gestures or actions, and shall avoid tactics to induce intimidation.
- The Parties shall be able to freely contribute and express opinions, and the views of others shall be examined and accepted as valid points. Parties shall focus on the subject of the consultation and avoid extraneous or unrelated conversation.

- The contribution of any Party shall be acknowledged and valued, and the Parties shall refrain from reaching decisions until consultation has concluded and sufficient information has been exchanged. However, the Parties understand and will respect that there are certain times of a calendar year that prohibit some Tribal topics from being verbalized.
- During consultation meetings, the Parties shall dress in appropriate Tribal/civilian clothing or dress uniform. Fatigues must not be worn unless warranted by the location of consultation activities, i.e., construction sites and field visits to Tribally significant sites/areas. Parties shall conduct themselves in a professional, dignified, and diplomatic manner.

APPENDIX F
Definitions and Workflow

DEFINITIONS – PLANS, REPORTS, AND FORMS

PLANS

Wing Survey Plans (WSP)—Comprehensive, general Cultural Resources survey plans developed prior to establishment of the Sentinel Programmatic Agreement (Agreement). There is one (1) WSP for each of the three (3) missile fields. These plans cover all the usual components of Cultural Resources survey plans, including historic context, literature review, research design, methodology, and identification of regional data gaps. Methodology and other key portions of these plans were incorporated into Appendix G (*Standard Approaches for Identification and Evaluation of Historic Properties*) of the Agreement.

The WSPs will serve as the foundation for, and will be referenced by, the various subsequent Work Plans developed over the course of the Sentinel project. Each of the three (3) pre-existing WSPs will be reviewed and updated, as necessary, and prior to development of any Work Plans at the respective missile field. Individual updates are expected to be relatively minor, but at a minimum will capture information obtained from preceding survey, monitoring, and data recovery generated by the Sentinel project at that missile field.

Work Plans—Plans will summarize the proposed fieldwork designed to identify historic properties and other significant cultural resources, and proposed treatments to avoid, minimize, or mitigate adverse effects to those properties, during the Sentinel project. These will incorporate the relevant WSP, as well as Appendix G of this Agreement, by reference. The plans will not reproduce all information each time, but will be streamlined and focused on location-specific information for the particular phase of fieldwork.

Each Work Plan will follow a standard format that will be developed from plan templates within the CR Common Operational Picture (CR-COP) system. Templates will be designed with expediency in mind, both in terms of plan development and Signatory, Concurring Party, and Tribe's review. Signatories, Concurring Parties, and Tribes will have fifteen (15) business days to review Work Plans and provide comment. If revisions are necessary following this review period, Signatories, Concurring Parties, and Tribes will have five (5) business days to review revised Work Plans. There will be three (3) types of Work Plans:

- **Survey Work Plan (Survey WP)**—Will be developed for each phase of construction, as designs are provided to AFNWC/NX by construction planners. AFNWC/NX may divide each set of project locations into survey areas of manageable portions, typically by construction start date, geographical location, or location type, as appropriate.

  Survey WPs will cover identification efforts for archeological, architectural, and other cultural resources for a given project area. They will include location-specific background information and the results of any initial desktop analysis (e.g., GIS, LiDAR, GPR) for the construction activity area in question conducted by AFNWC/NX, its contractors, and Tribes (should they chose to provide it). Survey WPs will also detail any deviations from the standard Areas of Potential Effects (APE) or methodology described in this Agreement that might be recommended for that area, based on the initial analysis.

- **Monitoring Work Plan (Monitoring WP)**—Will be developed for each phase of construction, once reviews of any preceding identification efforts have been conducted and Management Summary Reports have been reviewed by Signatories, Concurring Parties, and Tribes. A given

Monitoring WP will cover the same portion of the overall project area as a preceding Survey WP/Survey MS.

Monitoring WP will cover procedures for inadvertent discoveries and detail any specifics for monitoring all locations within a given construction activity area, such as fencing requirements and tailored avoidance procedures, if appropriate. Monitoring WP have the potential to be further revised, through consultation, pending the results of data recovery at covered sites, or in the event of unanticipated discoveries within the covered area during construction.

- **Data Recovery Work Plan (Data Recovery WP)**—When historic properties or other significant cultural resources cannot be avoided and data recovery is determined through consultation to be the appropriate course of action, Data Recovery Work Plans will be developed. As with Monitoring Work Plans, these will cover sites corresponding to a particular survey area (and a corresponding Survey WP/ Survey MS). This means Data Recovery WP might include one (1) or more archeological sites within a given project area.

  Data Recovery WPs will include details such as, but not limited to, a site-specific research design, site summary description(s), excavation volume, excavation unit placement, stratigraphy profile recordation, photography, procedures for total station mapping of features and diagnostic artifacts, and sampling techniques (including bulk soil, chronometric, pollen coring, and other special sampling, where appropriate). Overall level of effort will follow guidelines in this Agreement, with specifics determined on a site-by-site basis through consultation.

STANDARD REPORTS

Reporting on fieldwork will follow a phased, or tiered approach. All phases of fieldwork (survey, monitoring, and data recovery) will be immediately followed by a Management Summary which will be a simple initial report designed to expedite review and support rapid project decision making. Full Technical Reports for each phase of construction will follow later, with more time for review. Each Technical Report will incorporate findings from all phases of fieldwork in a given project area, and all the sites within that project area, into a single report. Finally, a single comprehensive Synthetic Report will be created for each of the three (3) missile fields once all fieldwork has been completed in that missile field and all preceding Technical Reports have been reviewed and accepted.

Management Summary—These brief field reports will be composed and distributed following the completion of all phases of fieldwork (survey, monitoring, and data recovery) for a given area of construction. Management Summaries will focus on describing what work was completed, what resources were identified, what data was recovered, and any significant issues that arose in completing the work, with an emphasis on expediting project decision making. AFNWC/NX will include determinations of eligibility and assessments of effect for sites within the corresponding survey area of each Survey MS.

AFNWC/NX will develop standard templates for Management Summaries to ensure consistency and focus, and to streamline review. Templates will be developed and made available within the CR-COP system, as will the Management Summaries. Management Summaries will include Project Resource Forms for any historic properties or other cultural resources that may have been identified or monitored.

Signatories, Concurring Parties, and Tribes will have fifteen (15) business days to review Management Summaries and provide comment. If revisions are necessary following this review period, Signatories, Concurring Parties, and tribes will have five (5) business days to review revised

Management Summaries. There will be three (3) types of Management Summaries, each corresponding to a related Work Plan: Survey MS, Monitoring MS, and Data Recovery MS.

Technical Report—Will be industry standard CR technical reports of findings for resource identification, monitoring, and data recovery efforts. Each area of construction will have a single corresponding Technical Report covering all phases of CR fieldwork for that area (survey, monitoring, and data recovery, if applicable). Technical Reports will have longer periods for review, as they will be more substantive documents than the Management Summaries, and there should not be project decisions pending the review of a Technical Report as there will be with Management Summaries. Technical Reports will include standard state resource forms, as applicable, for whichever state the corresponding project area is located within. Technical reports will include at a minimum, analysis of artifacts, features, and chronometric samples, site interpretations, and recommendations for future work (if appropriate).

Synthetic Report—Will be a comprehensive synthesis of all findings from all fieldwork and desktop analysis for each of the three (3) missile fields. Each Synthetic Report will essentially incorporate all relevant findings and analysis from the preceding Technical Reports from a given missile field and assess it in the context of the broader region, existing literature, and historic context. The three (3) Synthetic Reports will strive to address broader, region-specific research questions, draw potential conclusions, and address new research avenues resulting from the project findings. These will be written with a broader, more general audience, in addition to the professional Cultural Resources community.

Annual Report—These will be produced by AFNWC/NX each year to report on the overall progress of Cultural Resources compliance efforts under the Agreement. Annual Reports will summarize all construction activity and corresponding Cultural Resources fieldwork occurring during the preceding year, identify any significant problems or issues that arose (including those raised by Signatories, Concurring Parties, and Tribes), and provide recommendations for procedural changes, if warranted. Timing will be such that each draft Annual Report is disseminated for Signatory, Concurring Party, and Tribes review prior to the annual Agreement review meeting. The final Annual Report will incorporate any relevant issues brought forward at the annual meeting, and then be finalized and sent out again after the meeting.

FORMS

Project Resource Forms—Standard Project Resource Forms will be created and utilized for documenting archaeological sites and other cultural resources for this project. For consistency and to expedite review, the same forms will be used across the entirety of the project area. Templates will be developed in digital format and made available within CR-COP. Project Resource Forms will be structured in a manner to make it easy to later transfer all relevant information to a standard state resource form, whichever is appropriate for any given location. Management Summary Reports will include Project Resource Forms, while Technical Reports will include the appropriate standard state resource forms. These forms will be completed in real time and uploaded to CR-COP as sites are recorded during survey or monitoring.

Table F-1. Timeframe for Plans, Reports, and Forms

DOCUMENT/ACTION ITEM		**TIMEFRAME** (all Business Days)
Wing Survey Plan update (90 business days)	Contractor development	30 days
	AF review	10 days
	Signatory, Concurring Party, and Tribes review	**20 days**
	Contractor/AF revisions	10 days
	Signatory, Concurring Party, and Tribes review	**10 days**
	Pending Signatory comment, AF decision, finalize, and distribute	10 days
Survey Work Plan (60 business days)	AF initial analysis and Contractor development	20 days
	AF review	10 days
	Signatory, Concurring Party, and Tribes review	**15 days**
	Contractor/AF revisions	5 days
	Signatory, Concurring Party, and Tribes review	**5 days**
	Pending Signatory comment, AF decision/finalize and greenlight survey fieldwork	5 days
Survey Management Summary (50 business days)	Contractor development with TCS/Tribe input	15 days
	AF review, add determination of eligibility and assessment of effect (AF cover letter)	5 days
	Signatory, Concurring Party, and Tribes review	**15 days**
	Contractor/AF revisions	5 days
	Signatory, Concurring Party, and Tribes review	**5 days**
	Pending Signatory comment, AF decision and trigger development of monitoring/data recovery plans	5 days
Monitoring Work Plan (50 business days)	Contractor development	10 days
	AF review	10 days
	Signatory, Concurring Party, and Tribes review	**15 days**
	Contractor/AF revisions	5 days
	Signatory, Concurring Party, and Tribes review	**5 days**
	Pending Signatory comment, AF decision and greenlight construction (minus any data recovery outstanding)	5 days
Data Recovery Work Plan (40 business days)	Contractor development	5 days
	AF review	5 days
	Signatory, Concurring Party, and Tribes review	**15 days**
	Contractor/AF revisions	5 days
	Signatory, Concurring Party, and Tribes review	**5 days**
	Pending Signatory comment, AF decision and greenlight data recovery fieldwork	5 days

Monitoring Management Summary (40 business days)	Contractor development	5 days
	AF review	5 days
	Signatory, Concurring Party, and Tribes review	**15 days**
	Contractor/AF revisions	5 days
	Signatory, Concurring Party, and Tribes review	**5 days**
	Pending Signatory comment, AF decision and accept report as final	5 days

Data Recovery Management Summary (40 business days)	Contractor development	5 days
	AF review	5 days
	Signatory, Concurring Party, and Tribes review	**15 days**
	Contractor/AF revisions	5 days
	Signatory, Concurring Party, and Tribes review	**5 days**
	Pending Signatory comment, AF decision and greenlight construction	5 days

Technical Report (210 business days)	Contractor development	120 days
	AF review	20 days
	Signatory, Concurring Party, and Tribes review	**40 days**
	Contractor/AF revisions	10 days
	Signatory, Concurring Party, and Tribes review	**15 days**
	Pending Signatory concurrence, AF decision and accept as final	5 days

Synthetic Report (365 business days)	Contractor development	240 days
	AF review	40 days
	Signatory, Concurring Party, and Tribes review	**40 days**
	Contractor/AF revisions	20 days
	Signatory, Concurring Party, and Tribes review	**20 days**
	Pending Signatory comment, AF decision and accept as final	5 days

Annual Report (91 business days)	AF development	30 days
	Signatory, Concurring Party, and Tribes review of draft, input any "issues" from previous year	**20 days**
	AF ensures Signatory and Concurring Party input is incorporated	10 days
	Annual PA Meeting	1 day
	AF revisions for final	10 days
	Signatory, Concurring Party, and Tribes review of final (including meeting minutes)	**15 days**
	Pending Signatory comment, AF decision and accept as final, distribute	5 days

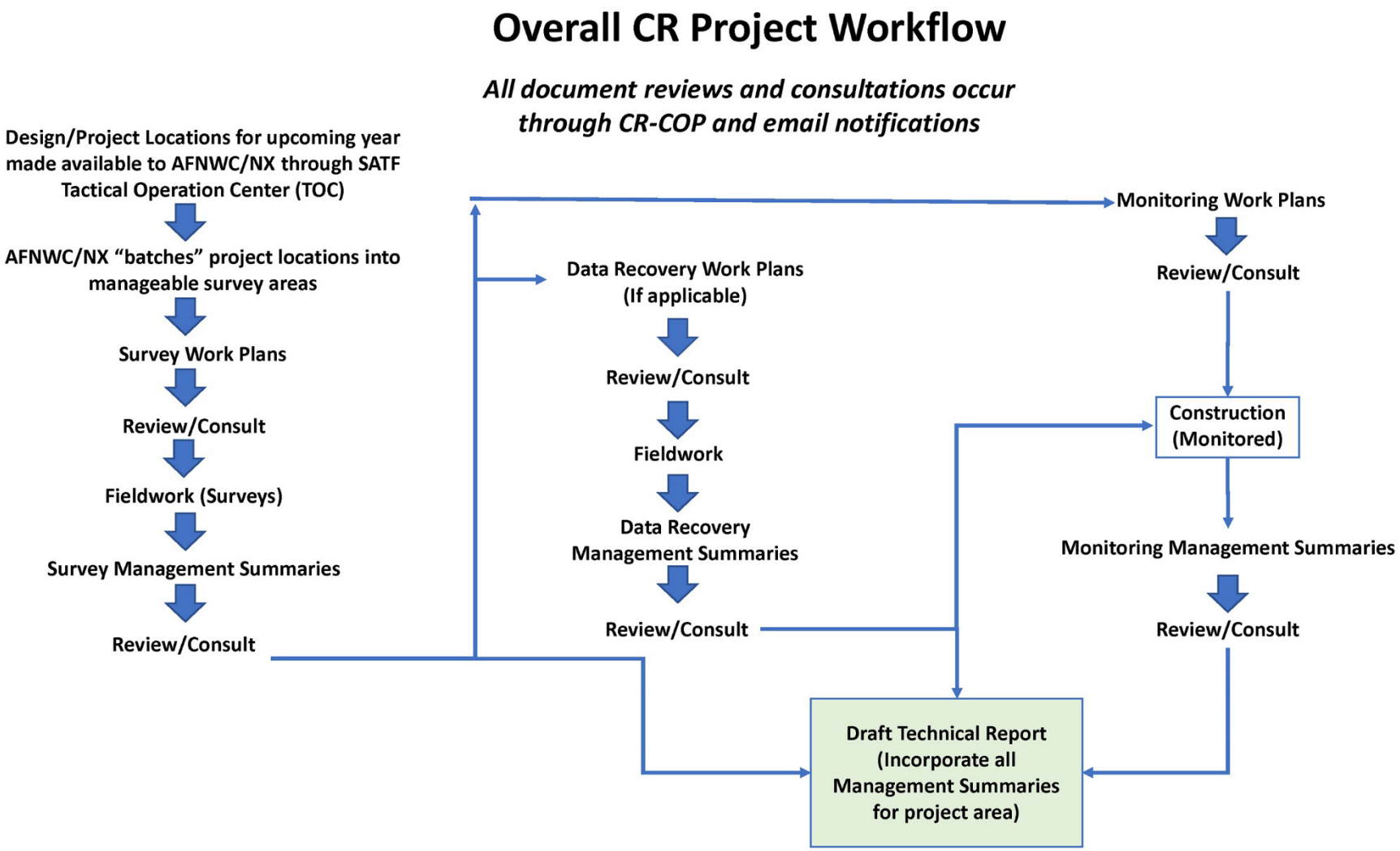


Figure F-1. Overall Cultural Resources Project Workflow

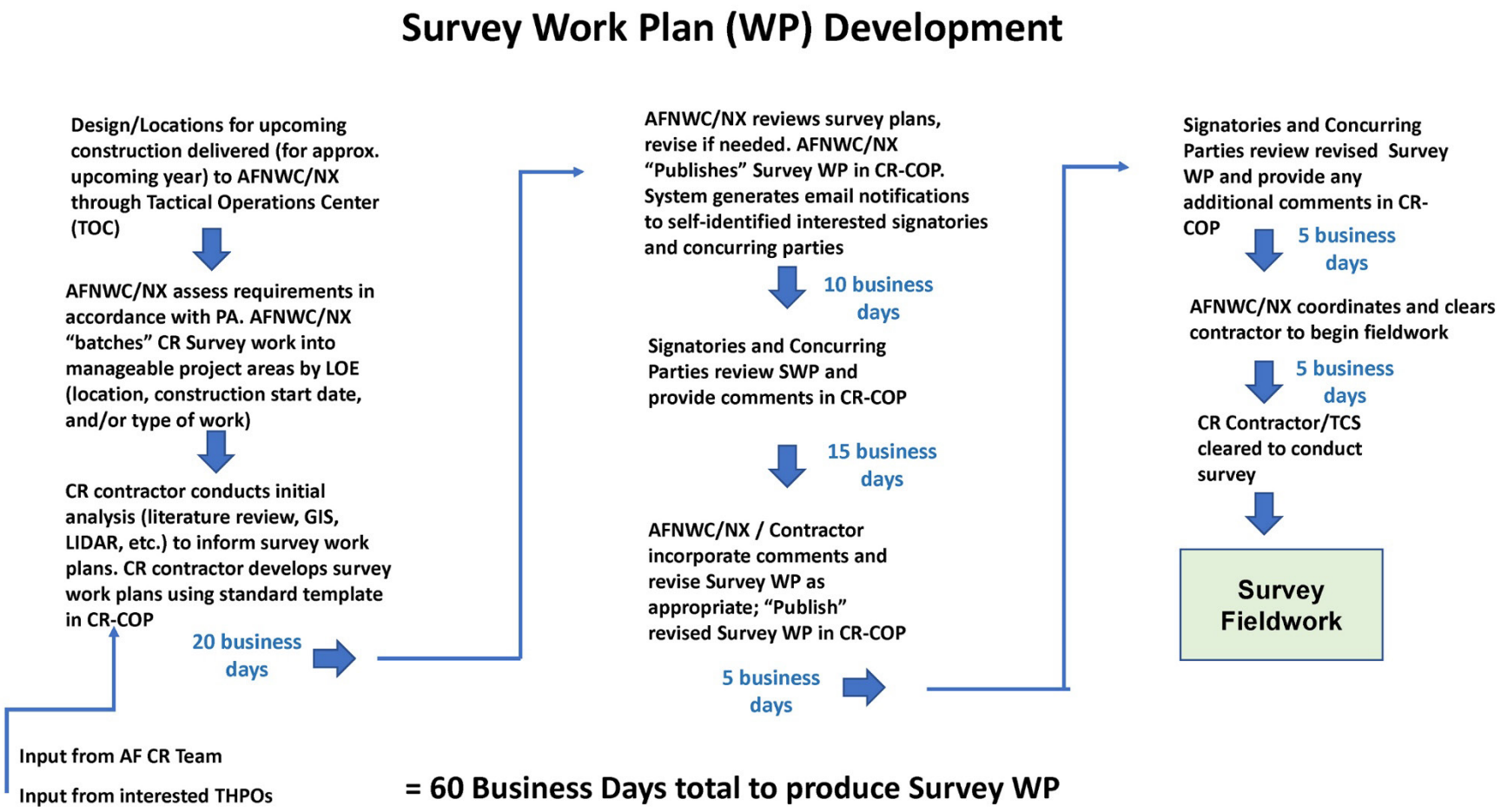


Figure F-2. Survey Work Plan (Survey WP) Development

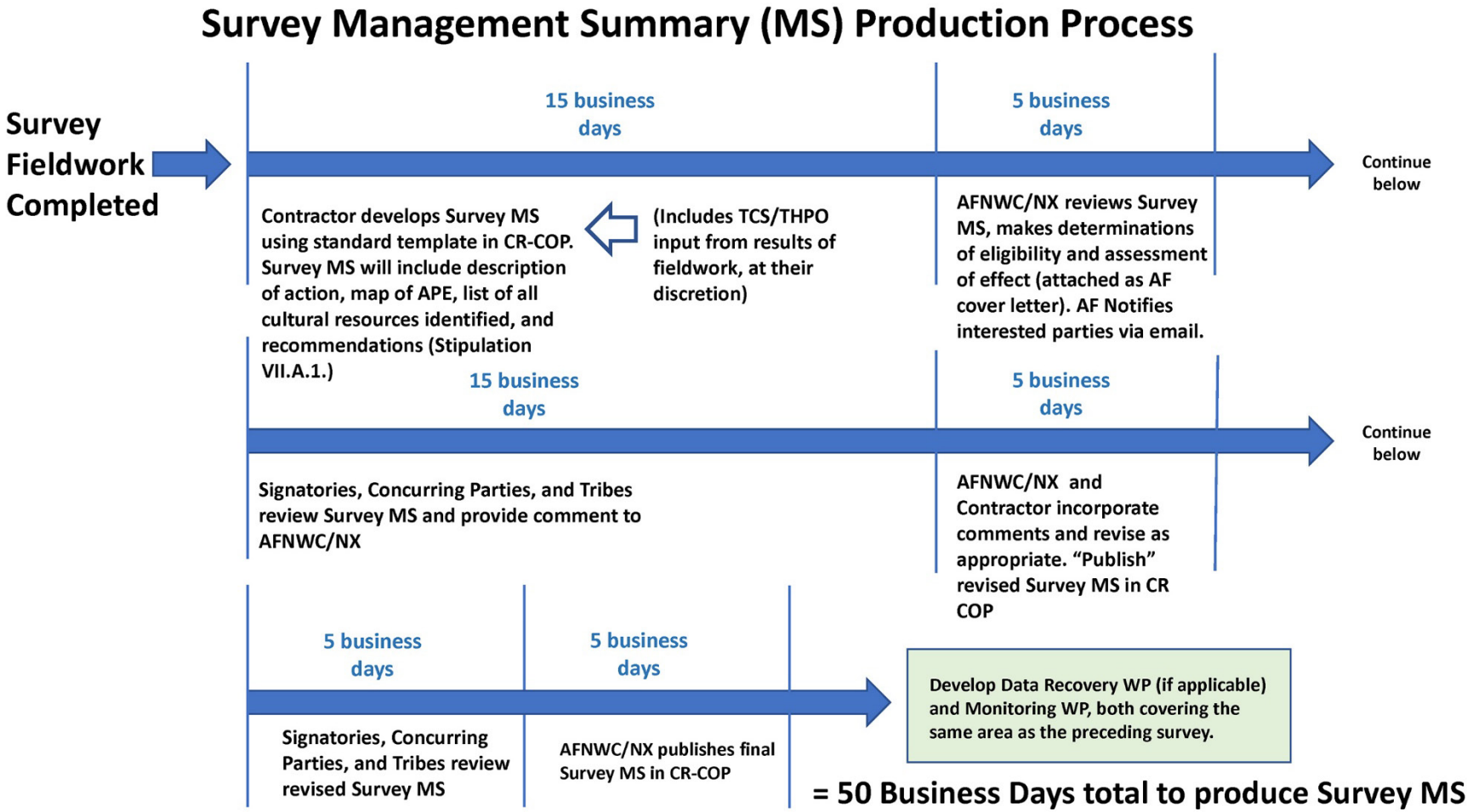


Figure F-3. Survey Management Summary (Survey MS) Process

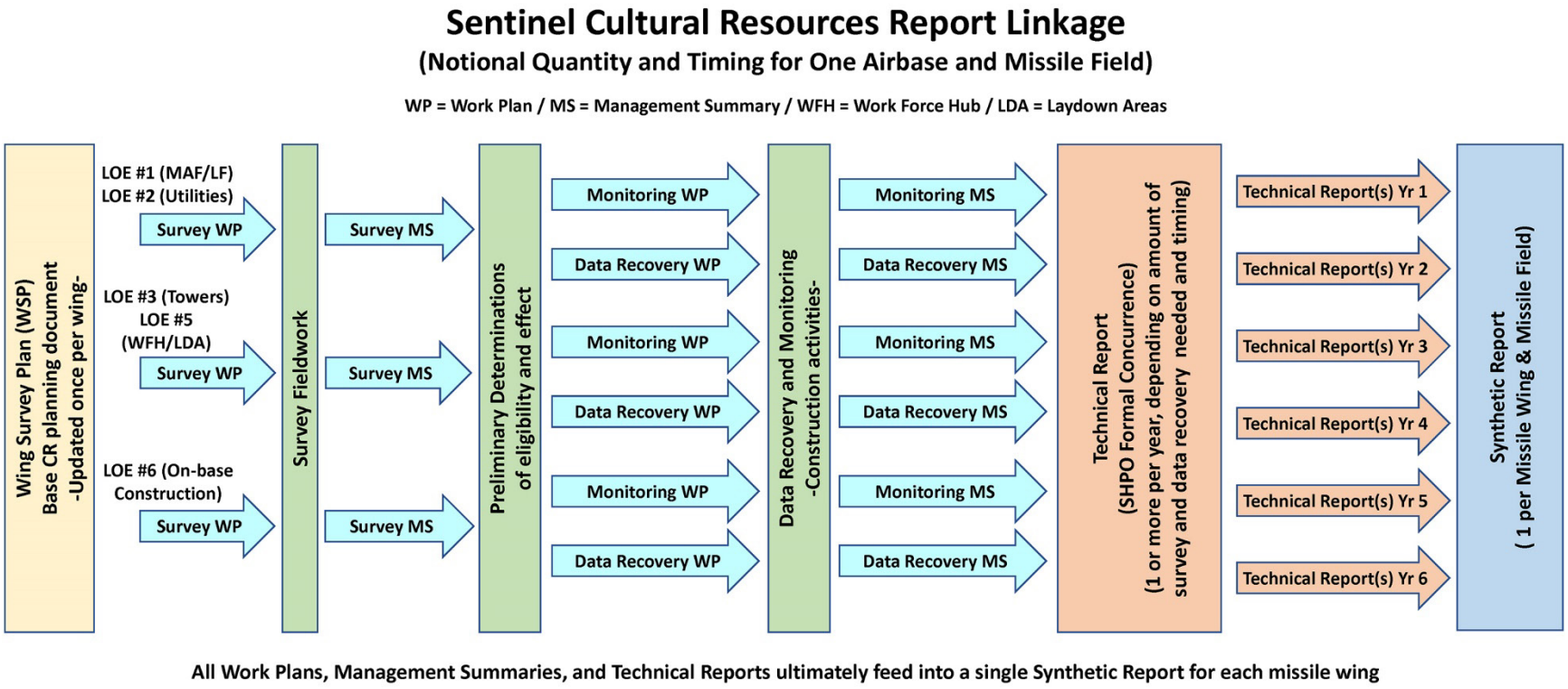


Figure F-4. Sentinel Cultural Resource Report Linkage

APPENDIX G
Standard Approaches for Identification and Evaluation of Historic Properties

Standard Approaches for Identification and Evaluation of Historic Properties

Once APEs have been defined, AFNWC/NX will conduct field investigations of each APE to determine the presence of cultural resources (built environment, archaeological, sites of Tribal significance, landscapes, districts) that might be affected by the Project. Field investigations have several components. Section G.1 describes the process of obtaining Tribal input for the identification and evaluation of cultural resources. Section G.2 discusses the process of updating the records searches, and Section G.3 discusses use of LiDAR and supplemental data to help identify high probability areas for each APE. Section G.4 describes intensive level cultural resources pedestrian survey of Physical APEs; these efforts may include supplemental shovel probing, as discussed. Specific locations identified as the Setting APEs will be included in the survey to assess visual, auditory, and atmospheric effects of the Project. Various types of cultural resources will be documented as outlined in Section G.5. Post-field analytical methods are described in Section G.6. Section G.7 discusses health and safety protocols for field investigations. The evaluation of National Register of Historic Places (National Register) eligibility is described in Section G.8.

G.1 TRIBAL PARTICIPATION

AFNWC/NX initiated consultation with 63 federally recognized Tribes for the Sentinel EIS and the Section 106 compliance process. Consultation efforts included sending letters with project information; conducting Tribal scoping meetings (held virtually due to the COVID-19 pandemic) to familiarize the Tribes with the Project; conducting Tribal consultation meetings virtually and in person to discuss topics and concerns related to the Section 106 process and participation of Tribes; conducting field research sessions with Tribal Cultural Specialists (TCSs) to familiarize them with the Project area; holding in-person meetings with Tribal leadership and staff; and exchanging emails and telephone calls. These efforts will continue throughout implementation of this Agreement.

It is clear from these interactions that many Tribes wish to participate in the identification of cultural resources, evaluations of significance, and assessments of effects from the Sentinel Project on cultural resources. Suggestions for participation from Tribes so far have included the following:

- Providing Tribes with information on survey areas prior to survey;
- Conducting pre-survey field visits so that Tribal members can view the landscape of the survey areas and provide guidance to surveyors;
- Having TCSs participate in the survey activities;
- Conducting post-survey field visits so that Tribal members can view resources that were identified; and
- Providing draft survey reports for Tribal review.

AFNWC/NX is committed to working with interested Tribes to determine how to involve each of them in these efforts. It is understood that each Tribe will know what methods of participation will work best for them and that it is not a one-size-fits-all effort. Because the Sentinel Project would occur over a number of years, consultation will be continuous and could result in changes to participation methods based on experience. It is also acknowledged that different survey areas could necessitate different types of involvement.

AFNWC/NX has offered Tribes the opportunity to participate in the cultural resources surveys and has already begun coordinating with Tribes interested in participating in those efforts. For each survey session, AFNWC/NX will determine where the surveys will be occurring and will provide

information collected as part of the efforts described in Sections G.2 and G.3 to Tribes to initiate consultation regarding Tribal participation for those surveys.

G.2 PRE-FIELD IDENTIFICATION OF PREVIOUS CULTURAL RESOURCES SURVEYS AND PREVIOUSLY DOCUMENTED RESOURCES

Once APEs have been defined, information on previously recorded cultural resources will be updated prior to intensive level cultural resources pedestrian surveys. This information will be provided in survey reports. Spatial data and documents will also be obtained from Federal land managing agencies and state agencies. Data updates will include reviews of historic BLM GLO (General Land Office) records, where available, as well as NPS national historic trail data, to determine whether vestiges of trails, transportation routes, homesteads, or other resources may be present in the APEs. NPS online database of properties listed in the National Register will be consulted, as will state registers of historic properties. AFNWC/NX will conduct in-person research at local museums, land offices, and other places where records are not available online. For resources where artifacts have been collected during previous sanctioned activities, such as during testing or data recovery excavations, AFNWC/NX will review activity documentation to identify where those collections are curated.

Data will be compiled, and spatial attributes will be maintained in ESRI ArcGIS. Site attributes recorded in these databases will include site location, age, type, National Register status, and a brief description of site characteristics. In the case of missing UTM data, locations will be digitized by hand in ArcGIS based on the most accurate available map and narrative information.

G.3 PRE-FIELD IDENTIFICATION OF AREAS OF INCREASED PROBABILITY FOR CULTURAL RESOURCES

Prior to fieldwork, historic maps and aerial photographs will be reviewed for potential archaeological resources and historic buildings or structures that may be present in or near the APEs. LiDAR or hyperspectral analyses conducted for the Project prior to fieldwork will also be reviewed to identify potential cultural resources.

While the LiDAR and airborne hyperspectral imaging data do not represent full coverage of the Project areas, AFNWC/NX will analyze the data collected from the flight path corridors prior to survey to identify potential resources within the APEs. The combination of data derived from agency databases, the environmental and cultural contexts of the Project areas, archival and GLO data, Tribal consultations, and review of LiDAR and hyperspectral data will allow AFNWC/NX to develop expectations for the range of potential cultural resources that may be encountered in the Physical and Setting APEs.

G.4 SURVEY FIELD METHODS

Pedestrian Survey

During pedestrian survey in the Physical APEs, field crews will walk and observe the ground, spread out in a line at 15-meter (m) intervals (i.e., transects). Survey control will be maintained through the use of 1:24,000 scale maps and Global Positioning System (GPS) units with sub-meter accuracy. When necessary and depending on current land use of the survey area, AFNWC/NX will plan surveys around maximizing ground surface visibility. For example, transect spacing may be narrowed if ground surface visibility in a specific survey area is poor. In addition, no survey will occur if the ground is snow-covered. Field directors will complete daily field notes, documenting the

beginning and ending survey locations, crew members, participating TCSs, environmental conditions, findings, and any issues concerning landowners and health and safety. AFNWC/NX's general policy, unless required by a land managing agency's policy, is not to collect artifacts.

Subsurface Shovel Probing

Supplemental shovel probing may be implemented in areas where the ground surface visibility is less than 30 percent. Additionally, up to six (6) shovel probes may be excavated where archaeological sites are identified to determine the presence or absence of subsurface deposits to aid in developing recommendations of National Register-eligibility. ARPA permits will be obtained prior to shovel-testing where required.

Shovel probes will be excavated at locations of identified archaeological resources where additional information is needed to make a recommendation of National Register-eligibility and there is potential for subsurface deposit (i.e., not in areas of exposed bedrock). Probe results will determine if a subsurface deposit exists, as well as identify subsurface site boundaries (vertical and horizontal). Locations will be based on slope, soil types (as indicated in the Natural Resources Conservation Service Web Soils Survey database), archaeological distribution patterns in the area, and surface visibility. No more than six (6) shovel probes will be excavated at each identified resource.

For survey areas where the ground surface visibility is less than 30 percent, shovel probes will be excavated in a linear transect spaced at 15 meters.

Each probe will be assigned a unique identifier, including the resource's temporary field identification number followed by "SP#." The probes will consist of 30-centimeter-diameter holes excavated in arbitrary 10-centimeter levels up to 50 centimeters below surface, or C horizon. Each shovel probe will be recorded on a shovel probe form, including soil descriptions, disturbances, and observed artifacts (if any) and anomalies (if any). Excavated materials will be screened through one-quarter-inch mesh. All shovel probes will be backfilled and compacted with the screened soils after being completed. Field crews will analyze all artifacts in the field, including recording descriptions and, as appropriate, measurements and photographs will be taken of each diagnostic or formal artifact. AFNWC/NX's general policy, unless required by a land managing agency's policy, is not to collect artifacts.

G.5 RESOURCE RECORDING

For surveys, an archaeological site is the location of a significant event, a pre- or post-contact occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archeological value, regardless of the value of any existing structure. Archaeological sites may be pre-contact, contact, post-contact, multicomponent, or of unknown temporal status. Each state's criteria for pre-contact and post-contact site classification, such as number or type of artifacts or presence of features, as well as for defining isolated finds (IFs), will be followed. As with survey transects, AFNWC/NX will default to the most stringent criteria for site definition. While archaeological sites are typically 50 years old or older, both sites and built resources need not always be at least 50 years old, as certain National Register significance criteria provide exceptions to this guideline. For example, under Criteria Consideration G, a property achieving significance within the last 50 years is eligible for listing in the National Register if it is of exceptional importance. Sites of Tribal significance are defined similarly to Traditional Cultural Properties (TCP) as properties that are associated with the cultural practices, traditions, beliefs, lifeways, arts, crafts, or social institutions of a living community. The living community is often, but not always, a Tribe.

Archaeological Sites

When archaeological resources are identified during the survey, crew members will walk meandering, concentric, and/or closely spaced (e.g., 5 m, depending on conditions) linear transects to determine the presence of any additional surface artifacts or cultural features. Locations of any discovered artifacts or features will be marked with pin flags and/or flagging tape to aid in determining the surface extent of artifact distribution and the possible identification of sites and to aid in mapping them. Pin flags and/or flagging tape will be removed following recordation.

Non-linear sites will be recorded in their entirety, provided that legal access has been acquired to the property. If access has not been acquired, analysis of GLO records, aerial photographs, and other archival information to discern the extent and nature of these resources beyond the APEs will supplement the field recordings. Where linear features such as trails, abandoned roads, abandoned railroad grades, and abandoned water conveyance features extend beyond the Physical APEs, only the segment within the Physical APEs will be recorded in detail. Analysis of GLO records, aerial photographs, and other archival information to discern the extent and nature of these resources beyond the APEs will supplement the field recordings.

Each newly identified site will be assigned a unique temporary identification number in the format of "Sentinel-FEW-[*field director's or crew chief's initials*]-##." Survey crews will complete all applicable forms in the field while on-site. All sites found during a particular survey session will be documented during that same session. Of any cultural, archaeological, or built environment resources identified during the survey, field crews will take detailed photographs as allowed.

Isolated Finds

When IFs are identified during the survey, crew members will walk transects and mark artifacts as described for archaeological sites. IFs will be labeled in the format Sentinel-FEW-[Field Director or Crew Chief Initials]-ISO-##.

Built Environment Resources in Physical APEs

When historic built environment resources are identified during survey, detailed photographs will be taken, and descriptions recorded in the field. If a street address can be obtained for a site, it will be noted on the resource form. The architectural style, building materials, current function, and any associated outbuildings or structures will also be described. Any associated archaeological deposits or the potential for such deposits will also be recorded. If occupants or owners of historic buildings or structures are available and willing, survey personnel will interview them regarding the history of the site, including any known construction dates, modifications, and historic use. Air Force installation Real Property records also will be inspected for historic built environment resources on installation property.

Historic built environment resources will be defined as standing or in-use buildings or structures. If the building or structure is in the process of deteriorating, the field director or crew chief will consult with the Project architectural historian to determine if the resources is recorded as a historic built environment resources or an archaeological site. On Air Force installations, this determination will be coordinated with the installation cultural resources manager (CRM) and the Air Force Civil Engineer Center installation support section media manager.

Where linear features such as in-use and functioning trails, historic roads, railroad grades, and water conveyance features extend beyond the Physical APEs, only the segment within the Physical APEs will be recorded in detail.

Historic Districts and Landscapes

The potential for historic districts or landscapes within the APEs will initially be identified through the results of the pre-field research previously described. These results will inform of the fieldwork efforts conducted, prompting the surveyors to look for relationships among the resources that are identified and recorded. The field survey results will be combined with the pre-field information to determine if linkages exist between resources and whether districts or landscapes are evident.

Cultural Resources in Setting APEs

Potential cultural resources in Setting APEs will be identified through pre-field research and Tribal consultation, as previously discussed. Information recorded within Setting APEs will be focused on collecting information that can be used for further consultation with interested Signatories, Concurring Parties, and Tribes. Survey crews will visit each resource within the Setting APE where setting may be a contributing factor in eligibility determination and assess its current condition from public rights-of-way. Additionally, the view from the property toward the project area will be documented and described on appropriate field forms as well as photographed. Survey crews also will assess the view from the properties toward the project site, as well as the potential for auditory or atmospheric effects. Digital photographs will be taken of typical conditions at each Setting APE and of cultural features of notable interest. Survey crews will consult with the installation security staff and CRM prior to taking any photographs within the boundaries of Air Force installations.

Sites of Tribal Significance

Sites of Tribal Significance are resources that have importance to Tribes for a wide range of cultural reasons. These tribally significant sites will be identified through consultations between AFNWC/NX and interested Tribes, as described in Section G.1. Sites of Tribal Significance will be evaluated to determine whether they meet the criteria for eligibility for listing in the National Register. They will also be listed in all applicable work plans, management summaries, and reports in accordance with the level of releasability expressed by the identifying Tribe(s).

Consultations will include discussion of Tribally appropriate methods to be employed to share and/or document sites of Tribal significance during fieldwork. Additional recording methods, as well as subsequent evaluations of significance and assessments of effects, for sites of Tribal significance will be determined in consultation with Tribes and are expected to be specific to each encountered resource.

Forms

AFNWC/NX will utilize all standard state forms, including recording forms to document identified resources during fieldwork allowing survey crews to collect the information needed to complete appropriate state forms for submission to State Historic Preservation Officers (SHPOs) in the office, without utilizing a different system for each state. Exceptions will be made for particular forms that are unique to and required by a given state. This may include forms such as:

- Archaeological Site Management Form. Used for general and overall site documentation, including description, interpretation, dimensions, and setting (including potential for additional artifacts or features).
- Historic Building or Structure Form. Used to document historic built environment sites or features, including description of materials (above-ground and in foundation), each façade,

function, dimensions, interpretation, and setting (including potential for associated archaeological materials).

- IF Form. Used to record IFs, including identification, dimensions, description, and setting (including potential for additional artifacts).
- Debitage Tally Form. Used for detailed accounting of general lithic assemblages, including color, material, and reduction stage.
- Flaked Stone Tool Form. Used for detailed accounting of formal lithic tools, including color, type, and dimensions.
- Groundstone Form. Used for detailed accounting of shaped groundstone tools, including color, type, and dimensions.
- Ceramic Tally Form. Used for detailed accounting of ceramic assemblages, including vessel form, shape, portion, and materials.
- Historic Glass Tally Form. Used for detailed accounting of glass artifacts and shards, including color, form/type, and completeness.
- Historic Can Tally Form. Used for detailed accounting of metal cans and other metal objects, including color, form/type, opening, and completeness.
- Rock Art Form. Used for detailed recording of pre-contact and post-contact inscriptions or paintings.
- Stone Circle Form. Used for detailed recording of circular stone features, including relationship to larger site, dimensions, and function.
- Mining Features Form. Used for detailed recording of mining-related features, including relationship to larger site, dimensions, and function.
- Survey Feature Form. Used for detailed recording of all other features within a site's boundary, including relationship to larger site, dimensions, and function.
- Shovel Test Form. Used to record depths, observations, and results of shovel probes, descriptions of soils, sediments, and observed artifacts.
- Historic Property Viewshed Form. Used to document current conditions of cultural resources in the Setting APEs and views toward the Project (unimpeded vs. partially or wholly impeded).
- Photo Log. Used to maintain a record of photographs taken of resources, shovel probes, and overviews of the survey area.

The information collected in the field will be converted post-field to the appropriate state resource form.

Photography

Digital photographs will be taken of each recorded resource as well as of general overviews of the survey area. Each photograph is intended to provide reviewers with a visual context of the survey area and its resources, as well as to visually document the current conditions of each resource.

When recording a resource, field crews will take overview photos of the resource setting and features as well as detail photos of diagnostic artifacts or features. Resource setting overview photos will include the entire resource with any pin flags, indicating artifact or feature locations. At a minimum, four (4) photos will be taken from outside the resource boundary in the four (4) cardinal directions. Additional photos from outside the resource boundary could include prominent landscape features. Photographs of buildings will include a view at each corner of the building to show two (2) façades of the structure in each photo. All photos will include a scale and north arrow and will be recorded on a photo log specific to the resource being recorded (i.e., one [1] photo log per resource). Survey crews will consult with installation security staff prior to taking any photographs within the

boundaries of Air Force installations. Photography of sites of Tribal significance will be subject to input received from TCSs.

Mapping

A digital site datum will be established at the approximate center of each newly identified resource using a GPS unit with sub-meter accuracy. Resource boundaries, feature boundaries, any shovel probe locations, photograph points, and locations of unique or diagnostic artifacts will be recorded using the GPS. Any prominent topographic features or disturbances will also be mapped. Mapping of sites of Tribal significance will be subject to input received from TCSs. Linear features that extend beyond the Physical APEs will be mapped for a limited, reasonable, and accessible distance outside the APEs. Efforts will be made post-field to digitize the full extent of the linear feature using current maps and aerial photographs of the area. The digitization will not extend beyond county boundaries.

GPS and GIS Standards

During all fieldwork, the field crew will use a GPS unit with sub-meter accuracy to determine survey location and map resources. Coordinates will be reference to NAD 83 Zone 13. A standardized data dictionary will be used for recording resources in the field. We will build the standardized data dictionary pulling fields from the state forms and installation data standards.

G.6 ANALYTICAL GOALS AND METHODS

Because no artifacts will be collected during pedestrian survey, analytical methods emphasize collecting data in the field that can be used to interpret the cultural and chronological contexts of documented resources. The types and frequencies of different artifact classes and features visible on-site surfaces can provide general information about the range of activities that occurred there. Additionally, comparisons of lithic raw material types and ceramic attributes may illuminate patterns of resource procurement, exchange, and interaction within or between regions. This section outlines sources for typological and chronological information to be used for the Project. Additionally, it outlines protocols for data processing and storage.

Typologies

Though not an all-inclusive list, primary sources for typological information include the following:

- Chipped stone analysis - the Cambridge *Lithics* manual (Andrefsky 2006), *Flintknapping: Making and Understanding Stone Tools* (Whittaker 1994), and *Projectile Points of the High Plains* (Taylor 2006), and any identified local or regional studies. Chipped stone analysis will be descriptive and functional, including examination of raw material selection, reduction and utilization, to the extent possible with in-field analysis. Attributes to be recorded include debitage reduction stage, tool forms and dimensions, visible use-wear and retouch, and, for projectile points, point type. The overall goal will be to determine the kinds and frequencies of chipped stone production and use represented at a given site and within the Study Area as a whole.
- Groundstone analysis – *Ground Stone Analysis: A Technological Approach* (Adams 2002). Like chipped stone, ground stone can inform on the range of subsistence activities that took place at a given site or within a given region. Because groundstone tends to be left on sites as "site furniture," such tools might reflect artifact discard and site formation processes rather than intensity of grinding activities. Groundstone analysis will be primarily descriptive and functional, with an emphasis on artifact identification, manufacturing technique, use and reuse, and discard behavior.

- Local geology studies will be referenced to facilitate consistent descriptions of lithic raw material types, particularly for chipped stone.
- Ceramic analysis - Typological and functional data will be recorded for any ceramics found. Typological analysis may provide relative dates for site occupations. Ceramic form and function analysis aids in identifying on-site subsistence activities.
- Historic cans and containers will be described following the conventions in the Intermountain Antiquities Computer System (IMACS) Guide (2001), which includes comprehensive information on can attributes that provide chronological and functional information.
- The IMACS Guide will also be used as a reference for glass bottle descriptions, including technological attributes and makers marks that provide chronological and functional information.

Key sources for architectural typology at the Air Force installations include:

- *Air Force Guidebook to Selected Air Force Historic Facilities, Volume I* (Weitze 2018)
- Department of Defense's Legacy Program's guidance*, Coming in from the Cold: Military Heritage in the Cold War* (Center for Air Force History 1991)
- Air Force guidance titled *Treatment of Cold War Historic Properties for U.S. Air Force Installations* (United States Air Force 1993), and
- *National Register of Historic Places Themes and Historic Context for the Air Force, Army, and Navy in the Cold War* (Prior et al. 2017)

Chronology

The cultural chronology developed from research conducted per Sections G.2 and G.3 will be used to assign temporal periods to identified resources, with reference to the installation cultural resources management plan and specific sources listed above.

Laboratory Tasks

Federal regulations require curation of archaeological collections and their associated records owned by Federal agencies in perpetuity (36 C.F.R. Part 79, *Curation of Federally-Owned and Administered Archeological Collections*). Long-term curation of digital data and paper documents will be necessary. This section outlines guidelines for processing and storing digital photographs and photo logs, processing and storing GIS data, and assigning Smithsonian trinomial numbers to newly identified sites.

Obtaining a Smithsonian number requires completion of the site form for the appropriate state, as well as providing photographs, a 7.5' Quad map showing the site location, a feature map for sites with three (3) or more features, and a shapefile of the site boundary. Smithsonian numbers will be requested from the appropriate SHPO for newly discovered cultural resources.

Because Air Force bases are closed installations with restricted areas, coordination with installation personnel will be necessary to obtain clearance to take photographs of cultural resources, particularly of historic architectural resources. If the base will not grant permission to take photographs of a specific cultural resource, the survey team will record that information on the appropriate resource forms and in the survey report. Digital copies of all photos taken at the installation will be provided to the government with the final reports. Submittal of digital photographs to the state will follow SHPO guidelines for the appropriate state.

All GIS data and maps providing site location(s) will be stored following Spatial Data Standards for Facilities, Infrastructure, and Environment (SDSFIE) guidelines. CR-COP will serve the role of an online SharePoint site that is the private-facing online location for all deliverables, supporting surveys, reports, data, and mapping, as applicable. The CR-COP will not be Common Access Card-enabled but will use dual-factor authentication for increased security. It will only be accessible to authorized users. Relevant information from the CR-COP will be included in the project administrative record. Submittal of GIS data to state agencies will follow SHPO guidelines for the appropriate state and be formally submitted with the Technical Reports.

Any paper documents generated as the result of or in support of surveys, data recovery, etc. will be stored in fire-resistant cabinets. These documents include background (reference materials that document previous work pertinent to the current investigation [e.g., site record searches, published and unpublished reports, and title searches]), field records (generated in performing current investigation fieldwork [e.g., site and other forms, daily logs, mapping data, and topographic maps used to record field data]), analysis records (catalogs, databases, data printouts, analyses, and laboratory reports), and report records (draft and final reports). These materials will be provided to AFNWC/NX with each final report.

G.7 HEALTH AND SAFETY

AFNWC/NX or its contractor will prepare a health and safety plan for cultural resources surveys related to the Project, to be updated yearly.

G.8 NATIONAL REGISTER-ELIGIBILITY EVALUATIONS

The survey methodologies described above are designed to identify cultural resources and facilitate National Register-eligibility evaluations based on observations of the resources' surface expressions and limited shovel probing, where possible. The goal is to make recommendations to AFNWC/NX as the lead Federal agency for Section 106. Ultimately, determinations of National Register eligibility will be based on survey findings, ongoing consultations between AFNWC/NX and Signatories, Concurring Parties, and Tribes, the cultural and historic contexts developed, and results of the records search and literature review.

Resources will be evaluated using the National Register eligibility criteria discussed below. Eligible resources will be those that meet one (1) or more of the criteria for eligibility. In addition, resources evaluated as eligible must retain sufficient integrity of location, design, setting, materials, workmanship, feeling, and association to convey their historic significance. Eroded or otherwise heavily disturbed resources, and those that have lost most or all of their integrity in the seven (7) categories noted above are *generally* not considered eligible, pending consultation. The integrity of a resource is directly connected to the National Register criterion/criteria under which it may qualify for eligibility, and direct or indirect effects to a resource may impact its eligibility differentially depending upon the type of resource and the reason for its historic significance. At a minimum, there must be integrity of the essential physical features that are required to be present for a property to represent its significance. Resources that are evaluated as not eligible either do not exhibit significance under the eligibility criteria or lack enough integrity to convey the resource's significance. Resources that require additional study in order to determine National Register eligibility are treated as eligible for inclusion in the National Register if, and until, additional study is completed and a formal determination is made.

Preliminary recommendations for eligibility are based on the following criteria codified in Title 36 C.F.R. Part 60.4 and specified as follows:

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

B. That are associated with the lives of persons significant in the past; or

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master, or that possess high artistic value, or that represent a significant or distinguishable entity whose components may lack individual distinction; or

D. That have yielded, or are likely to yield, information important in prehistory or history.

Ordinarily, cemeteries, birthplaces, or graves of historical figures; property owned by religious institutions or used for religious purposes; structures that have been removed from their original location; reconstructed historic buildings; properties that are primarily commemorative in nature; and properties that have achieved significance within the last 50 years shall not be considered eligible for the National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria, or if they fall within the following categories:

- A religious property deriving primary significance from architectural or artistic distinction or historical importance; or
- A building or structure removed from its original location, but which is significant primarily for its architecture, or which is the surviving structure most importantly associated with a historic person or event; or
- A birthplace or grave of a historical figure of outstanding importance if there is no other appropriate site or building directly associated with his or her productive life; or
- A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or
- A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan and when no building or structure with the same association has survived; or
- A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own historical significance; or
- A property achieving significance within the past 50 years if it is of exceptional importance.

When evaluating identified resources for National Register eligibility, historic contexts will be considered, as well as the results of the literature review. Additionally, traditional Native American uses of the survey area, guided by input derived through the involvement of TCSs in surveys and through AFNWC/NX's government-to-government consultations with Tribes, will be considered, particularly with respect to Criteria A and B. Historic maps and aerial photographs will also be reviewed for evidence of resources as well as their possible purpose, as appropriate. Historic maps will be obtained from the USGS topoView website (https://ngmdb.usgs.gov/topoview/viewer/#4/40.01/-107.49) and BLM's GLO Records website (https://glorecords.blm.gov/default.aspx). Aerial photographs will be obtained from the USGS Earth

Explorer website (https://earthexplorer.usgs.gov/). These photographs typically range from between the 1940s and 1970s. Google Earth will also be utilized for modern aerial photographs. In addition to historic maps and aerial photographs, various literature and online resources will be consulted as appropriate in research regarding individual landowners, other individuals associated with a resource, or specific built environment resources. This may include BLM GLO Records, state water resources department water rights databases, Ancestry.com, historic newspapers, local or regional archives, historical societies, U.S. Federal Census records, World War I and World War II draft registration cards, state marriage and death records, and the Brigham Young University-Idaho Special Collections, Western States Marriage Record Index (http://abish.byui.edu/specialCollections/westernStates/search.cfm). These informational sources will also assist in the definition and evaluation of potential landscapes and historic districts that include resources located within the Physical and Setting APEs.

National Register-eligibility recommendations will be reviewed and accepted or modified by AFNWC/NX and subsequently submitted to the appropriate SHPO. It should be noted that for sites that may be significant to Tribes, AFNWC/NX will consult with the affiliated Tribes to make appropriate National Register eligibility recommendations.

APPENDIX H
Post-Review Discovery Plan

1. APPLICABILITY STATEMENT

A. This Post-Review Discovery Plan applies to all areas of the Undertaking. Post-review discoveries of historic properties or sites of significance to Tribes may occur on four (4) categories of land ownership:

1. Air Force or federally owned or managed lands,
2. Mandan, Hidatsa and Arikara Nation (MHA Nation) owned or managed lands,
3. state owned or managed lands, and
4. privately owned lands. Each of these categories has similar but unique requirements for certain aspects of how inadvertent discoveries will be handled.

B. This Post-Review Discovery Plan will supersede the inadvertent/post-review discovery standard operating procedures or plans contained in the installations' Integrated Cultural Resources Management Plans for any action under this Agreement.

2. PROCEDURES

A. In accordance with Stipulation II, the primary means of notification and communication for the Undertaking, including post-review discoveries, will be through CR-COP unless otherwise noted. CR-COP will include a standard form for reporting Post-Review discoveries. This notification will primarily be conducted by either an archaeologist or a Tribal Cultural Specialist (TCS), either of who will be on site during all ground disturbing construction.

1. Any evaluations of eligibility or assessments of effects to historic properties necessitated by discoveries will be made in consultation with the appropriate Signatories, Concurring Parties, and Tribes.
2. If necessary, Work Plans to define treatment of post-review discoveries will be developed in accordance with procedures similar to those described in Stipulations VIII and X.
3. Post-review discoveries and associated investigations will be reported per Stipulations IX and XI.

B. Discoveries with a Monitor.

1. A project archaeologist or TCS has the authority to temporarily stop all ground disturbing activities in the event of as post-review discovery or an inadvertent effect during the course of authorized work.
2. Upon positive identification of the post-review discovery or an inadvertent effect, the archaeologist or TCS shall notify AFNWC/NX. AFNWC/NX shall cease immediately all work activities within a minimum of fifty (50) feet or larger as recommended by the AFNWC/NX archaeologist or TCS on a case-by-case basis, of the discovery and the site will be secured. The archaeologist or TCS will take actions necessary to secure the discovery location. Work shall remain suspended until notified by AFNWC/NX that work may proceed.

C. Discoveries without a Monitor. Should a post-review discovery or an inadvertent effect occur when an archaeologist or TCS is not present, project personnel (e.g., construction or environmental monitors) shall immediately cease all work that may within a minimum of 100 feet. The area of the discovery shall be secured and protected from further disturbance,

including using flagging or another visible marker. Sensitive resources, such as human remains, may not include visual markers in order to avoid attracting attention. The discovery may be temporarily protected through stabilization or non-destructive covering. Reasonable steps shall be taken to ensure confidentiality of the discovery and restrict access.

D. Discoveries of Human Remains on Federal or Tribal Lands.

1. If a discovery of human remains is made on lands administered by a Federal agency or MHA Nation, AFNWC/NX shall cease immediately all work activities within a minimum of 50 feet, or larger as recommended by the AFNWC/NX archaeologist or TCS on a case-by-case basis, of the discovery and the site will be secured. AFNWC/NX will immediately telephonically notify the Federal land managing agency or MHA Nation, and law enforcement entities with jurisdiction to determine if remains are forensic or will be treated as human remains under NAGPRA (25 U.S.C. § 3001 *et seq*.; 43 C.F.R. Part 10).
2. No later than 24 hours after the discovery and if the human remains are determined to fall under the purview of NAGPRA, AFNWC/NX shall provide in writing the Federal land managing agency or MHA Nation with any necessary information pertinent to the discovery to include, but not limited to, the general location and contents of the discovery, the activity related to the discover, steps taken to secure and protect the human remains and any associated cultural items, and confirmation that all activity around the discovery have stopped and will not resume until the date provided in a written certification issued by the Federal land managing agency or MHA Nation.
3. Jurisdiction over the discovery will lie with the Federal land managing agency or MHA Nation and that agency will follow its procedures and policy under NAGPRA.
4. AFNWC/NX shall notify all Tribes who are consulting Parties to this Agreement of the discovery and inform the Tribes that the discovery will be resolved through the Federal land managing agency's or MHA Nation's NAGPRA procedures. AFNWC/NX shall provide the name and contact information of the Federal land managing agency's archaeologist or MHA Nation's NAGPRA Officer in charge of those respective procedures to the Tribes.
5. Ground-disturbing activities at the scene of the discovery will not recommence without express written permission of AFNWC/NX. This permission will not be issued until the Federal land managing agency or MHA Nation provides AFNWC/NX with a written certification that activities may resume.

E. Discoveries of Human Remains on State or Private Lands.

1. If a discovery of human remains is made on non-federal or non-Tribal lands, AFNWC/NX shall cease immediately all work activities within 50 feet, or larger as recommended by the AFNWC/NX archaeologist on a case-by-case basis, of the discovery and the site will be secured. Jurisdiction over the discovery will lie with the State. AFNWC/NX shall follow the processes and procedures as described in the relevant State's statutes and rules, and shall provide the State with any necessary information pertinent to the discovery.
2. AFNWC/NX shall develop implementation guidance in accordance with each state's burial/grave compliance process and accomplish required notifications.

F. Exclusions not requiring a construction stop for further evaluation.

1. Individual artifacts located during ground disturbing activities will be recorded in accordance with the Monitoring Work Plan.
2. Historic building material (e.g., nails, bricks, plaster, glass, etc.), on areas known to be associated with a demolished building on an Air Force installation, will be recorded in accordance with the Monitoring Work Plan.

APPENDIX D: AIR QUALITY SUPPORTING INFORMATION

Contents

Page intentionally left blank.

D.1 AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF AIR ANALYSIS

Page intentionally left blank.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: F.E. WARREN AFB
State: Wyoming
County(s): Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: GBSD Deployment

c. Project Number/s (if applicable): GBSD Deployment

d. Projected Action Start Date: 1 / 2023

e. Action Description:

GBSD Deployment

f. Point of Contact:

Name:	TLL
Title:	x
Organization:	x
Email:	x
Phone Number:	x

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.290	250	No
NOx	1.569	250	No
CO	1.725	250	No
SOx	0.005	250	No
PM 10	0.872	250	No
PM 2.5	0.057	250	No
Pb	0.000	25	No
NH3	0.003	250	No
CO2e	488.3		

2024 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	250	No
NOx	0.000	250	No
CO	0.000	250	No
SOx	0.000	250	No
PM 10	0.000	250	No
PM 2.5	0.000	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	0.0		

None of estimated annual net emissions associated with this action are above the insignificance indicators, indicating no significant impact to air quality.Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs.No further air assessment is needed.

_____ _____

TLL, x DATE

1. General Information

- Action Location
Base: F.E. WARREN AFB
State: Wyoming
County(s): Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: GBSD Deployment

- Project Number/s (if applicable): GBSD Deployment

- Projected Action Start Date: 1 / 2023

- Action Purpose and Need:
GBSD Deployment

- Action Description:
GBSD Deployment

- Point of Contact
Name: TLL
Title: x
Organization: x
Email: x
Phone Number: x

- Activity List:

	Activity Type	Activity Title
2.	Construction / Demolition	Launch Facility

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
County: Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Launch Facility

- Activity Description:
LF
Phase Duration Pieces of Equipment Area
Excavation 2 5 21780
Demolition 1 5 21780
Building Construction 3 1 21780
Grading 1 2 43560
Paving 1 2 43560

- Activity Start Date
Start Month: 1
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 3
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.289973
SO_x	0.004833
NO_x	1.569168
CO	1.725229
PM 10	0.872341

Pollutant	Total Emissions (TONs)
PM 2.5	0.056918
Pb	0.000000
NH_3	0.002536
CO_2e	488.3

2.1 Demolition Phase

2.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

2.1.2 Demolition Phase Assumptions

- General Demolition Information
Area of Building to be demolished (ft^2): 21780
Height of Building to be demolished (ft): 12

- Default Settings Used: No

- Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Concrete/Industrial Saws Composite	1	4
Cranes Composite	1	8
Excavators Composite	1	8
Off-Highway Trucks Composite	2	8
Tractors/Loaders/Backhoes Composite	1	12

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20
Average Hauling Truck Round Trip Commute (mile): 60

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 120

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Demolition Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Concrete/Industrial Saws Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0382	0.0006	0.2766	0.3728	0.0127	0.0127	0.0034	58.549
Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Off-Highway Trucks Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1243	0.0026	0.5880	0.5421	0.0188	0.0188	0.0112	260.35
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e

LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.1.4 Demolition Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (0.00042 * BA * BH) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
0.00042: Emission Factor (lb/ft^3)
BA: Area of Building to be demolished (ft^2)
BH: Height of Building to be demolished (ft)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building being demolish (ft^2)
BH: Height of Building being demolish (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards ($1\ yd^3 / 27\ ft^3$)
0.25: Volume reduction factor (material reduced by 75% to account for air space)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.2 Site Grading Phase

2.2.1 Site Grading Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration

Number of Month: 0
Number of Days: 14

2.2.2 Site Grading Phase Assumptions

- General Site Grading Information

Area of Site to be Graded (ft^2): 43580
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings

Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	12
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	12
Scrapers Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20

Average Hauling Truck Round Trip Commute (mile): 120

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 120

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.2.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.2.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)

20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.3 Trenching/Excavating Phase

2.3.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 2
Number of Days: 0

2.3.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 21780
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	12
Off-Highway Trucks Composite	1	12
Other Material Handling Equipment Composite	1	8
Rubber Tired Dozers Composite	1	12
Tractors/Loaders/Backhoes Composite	1	12

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20
Average Hauling Truck Round Trip Commute (mile): 120

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 120

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.3.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.3.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.4 Building Construction Phase

2.4.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 3
Number of Days: 0

2.4.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Commercial or Retail
Area of Building (ft^2): 21780
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	2
Off-Highway Trucks Composite	1	2
Tractors/Loaders/Backhoes Composite	1	2

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 120

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 0

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 60

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

2.4.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Off-Highway Trucks Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1243	0.0026	0.5880	0.5421	0.0188	0.0188	0.0112	260.35
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.6

2.4.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.32 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.32 / 1000): Conversion Factor ft^3 to trips (0.32 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.05 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)

BH: Height of Building (ft)
(0.05 / 1000): Conversion Factor ft^3 to trips (0.05 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.5 Paving Phase

2.5.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 0
Number of Days: 7

2.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 43580

- Paving Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Pavers Composite	1	8
Paving Equipment Composite	1	8
Rollers Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 60

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 0

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)

(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / $acre)^2$ / acre)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: F.E. WARREN AFB
State: Wyoming
County(s): Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: GBSD Deployment

c. Project Number/s (if applicable): GBSD Deployment

d. Projected Action Start Date: 1 / 2023

e. Action Description:

GBSD Deployment

f. Point of Contact:

Name:	TLL
Title:	x
Organization:	x
Email:	x
Phone Number:	x

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.538	250	No
NOx	2.883	250	No
CO	3.209	250	No
SOx	0.009	250	No
PM 10	4.056	250	No
PM 2.5	0.105	250	No
Pb	0.000	25	No
NH3	0.005	250	No
CO2e	896.2		

2024 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	250	No
NOx	0.000	250	No
CO	0.000	250	No
SOx	0.000	250	No
PM 10	0.000	250	No
PM 2.5	0.000	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	0.0		

None of estimated annual net emissions associated with this action are above the insignificance indicators, indicating no significant impact to air quality.Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs.No further air assessment is needed.

_____ _____

TLL, x DATE

1. General Information

- Action Location
Base: F.E. WARREN AFB
State: Wyoming
County(s): Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: GBSD Deployment

- Project Number/s (if applicable): GBSD Deployment

- Projected Action Start Date: 1 / 2023

- Action Purpose and Need:
GBSD Deployment

- Action Description:
GBSD Deployment

- Point of Contact
Name: TLL
Title: x
Organization: x
Email: x
Phone Number: x

- Activity List:

	Activity Type	Activity Title
2.	Construction / Demolition	Missile Alert Facility

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
County: Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Missile Alert Facility

- Activity Description:
Missile Alert Facility
Phase Duration Pieces of Equipment Area
Excavation 2 10 130680
Demolition 1 10 43560
Building Construction 3 1 43560
Grading 1 2 130680
Paving 1 2 130680

- Activity Start Date
Start Month: 1
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 3
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.538412
SO_x	0.008883
NO_x	2.883341
CO	3.209209
PM 10	4.055740

Pollutant	Total Emissions (TONs)
PM 2.5	0.105282
Pb	0.000000
NH_3	0.004569
CO_2e	896.2

2.1 Demolition Phase

2.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

2.1.2 Demolition Phase Assumptions

- General Demolition Information
Area of Building to be demolished (ft^2): 43560
Height of Building to be demolished (ft): 12

- Default Settings Used: No

- Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Concrete/Industrial Saws Composite	2	4
Cranes Composite	2	8
Excavators Composite	1	8
Off-Highway Trucks Composite	4	8
Tractors/Loaders/Backhoes Composite	2	12

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20
Average Hauling Truck Round Trip Commute (mile): 60

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 120

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Demolition Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Concrete/Industrial Saws Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0382	0.0006	0.2766	0.3728	0.0127	0.0127	0.0034	58.549
Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Off-Highway Trucks Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1243	0.0026	0.5880	0.5421	0.0188	0.0188	0.0112	260.35
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.1.4 Demolition Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (0.00042 * BA * BH) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
0.00042: Emission Factor (lb/ft^3)
BA: Area of Building to be demolished (ft^2)
BH: Height of Building to be demolished (ft)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building being demolish (ft^2)
BH: Height of Building being demolish (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards ($1\ yd^3 / 27\ ft^3$)
0.25: Volume reduction factor (material reduced by 75% to account for air space)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.2 Site Grading Phase

2.2.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 0
Number of Days: 14

2.2.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 130680
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	2	12
Other Construction Equipment Composite	2	8
Rubber Tired Dozers Composite	2	12
Scrapers Composite	1	8
Tractors/Loaders/Backhoes Composite	2	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20
Average Hauling Truck Round Trip Commute (mile): 120

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 120

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.2.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.2.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.3 Trenching/Excavating Phase

2.3.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 2
Number of Days: 0

2.3.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 130680
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	12
Off-Highway Trucks Composite	2	12
Other Material Handling Equipment Composite	2	8
Rubber Tired Dozers Composite	2	12
Tractors/Loaders/Backhoes Composite	2	12

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20
Average Hauling Truck Round Trip Commute (mile): 120

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 120

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.3.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Graders Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61

Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.3.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.4 Building Construction Phase

2.4.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 3
Number of Days: 0

2.4.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Commercial or Retail
Area of Building (ft^2): 21780
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	2
Off-Highway Trucks Composite	1	2
Tractors/Loaders/Backhoes Composite	1	2

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 120

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 0

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 60

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

2.4.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Off-Highway Trucks Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1243	0.0026	0.5880	0.5421	0.0188	0.0188	0.0112	260.35
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628

MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.4.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.32 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.32 / 1000): Conversion Factor ft^3 to trips (0.32 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.05 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)

BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.05 / 1000): Conversion Factor ft^3 to trips (0.05 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.5 Paving Phase

2.5.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 0
Number of Days: 14

2.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 130680

- Paving Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Pavers Composite	1	8
Paving Equipment Composite	1	8
Rollers Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 60

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 0

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC

POVs	50.00	50.00	0	0	0	0	0

2.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)

0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / $acre)^2$ / acre)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: F.E. WARREN AFB
State: Wyoming
County(s): Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: GBSD Deployment

c. Project Number/s (if applicable): GBSD Deployment

d. Projected Action Start Date: 1 / 2023

e. Action Description:

GBSD Deployment

f. Point of Contact:

Name:	TLL
Title:	x
Organization:	x
Email:	x
Phone Number:	x

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.086	250	No
NOx	0.538	250	No
CO	0.462	250	No
SOx	0.001	250	No
PM 10	0.260	250	No
PM 2.5	0.020	250	No
Pb	0.000	25	No
NH3	0.001	250	No
CO2e	141.0		

2024 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	250	No
NOx	0.000	250	No
CO	0.000	250	No
SOx	0.000	250	No
PM 10	0.000	250	No
PM 2.5	0.000	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	0.0		

None of estimated annual net emissions associated with this action are above the insignificance indicators, indicating no significant impact to air quality.Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs.No further air assessment is needed.

_____ _____

TLL, x DATE

1. General Information

- Action Location
Base: F.E. WARREN AFB
State: Wyoming
County(s): Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: GBSD Deployment

- Project Number/s (if applicable): GBSD Deployment

- Projected Action Start Date: 1 / 2023

- Action Purpose and Need:
GBSD Deployment

- Action Description:
GBSD Deployment

- Point of Contact
Name: TLL
Title: x
Organization: x
Email: x
Phone Number: x

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	Communication Tower

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
County: Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Communication Tower

- Activity Description:
Communication Tower
Phase Duration Pieces of Equipment Area
Building Construction 2 3 43560
Grading 2 2 43560
Paving 1 2 43560

- Activity Start Date
Start Month: 1
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 3
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.086253
SO_x	0.001381
NO_x	0.537505
CO	0.462056
PM 10	0.260483

Pollutant	Total Emissions (TONs)
PM 2.5	0.020270
Pb	0.000000
NH_3	0.000671
CO_2e	141.0

2.1 Site Grading Phase

2.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 0
Number of Days: 14

2.1.2 Site Grading Phase Assumptions

- General Site Grading Information

Area of Site to be Graded (ft^2): 43560
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings

Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	12
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	12
Scrapers Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20
Average Hauling Truck Round Trip Commute (mile): 120

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 120

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
VMT_{WT} = WD * WT * 1.25 * NE

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.2 Building Construction Phase

2.2.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 2
Number of Days: 0

2.2.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Commercial or Retail
Area of Building (ft^2): 21780
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	12
Off-Highway Trucks Composite	1	2
Tractors/Loaders/Backhoes Composite	1	2

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 120

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 0

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 60

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

2.2.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Off-Highway Trucks Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1243	0.0026	0.5880	0.5421	0.0188	0.0188	0.0112	260.35
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.2.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.32 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.32 / 1000): Conversion Factor ft^3 to trips (0.32 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase

$VMT_{VT} = BA * BH * (0.05 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.05 / 1000): Conversion Factor ft^3 to trips (0.05 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

2.3 Paving Phase

2.3.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 0
Number of Days: 14

2.3.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 43560

- Paving Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Pavers Composite	1	8
Paving Equipment Composite	1	8
Rollers Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 60

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 0

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.3.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.3.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: F.E. WARREN AFB
State: Wyoming
County(s): Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: GBSD Deployment

c. Project Number/s (if applicable): GBSD Deployment

d. Projected Action Start Date: 1 / 2023

e. Action Description:

GBSD Deployment

f. Point of Contact:

Name:	TLL
Title:	x
Organization:	x
Email:	x
Phone Number:	x

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.212	250	No
NOx	1.357	250	No
CO	1.321	250	No
SOx	0.004	250	No
PM 10	0.843	250	No
PM 2.5	0.052	250	No
Pb	0.000	25	No
NH3	0.002	250	No
CO2e	403.6		

2024

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.814	250	No
NOx	0.000	250	No
CO	0.000	250	No
SOx	0.000	250	No
PM 10	0.000	250	No
PM 2.5	0.000	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	0.0		

2025 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.814	250	No
NOx	0.000	250	No
CO	0.000	250	No
SOx	0.000	250	No
PM 10	0.000	250	No
PM 2.5	0.000	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	0.0		

None of estimated annual net emissions associated with this action are above the insignificance indicators, indicating no significant impact to air quality.Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs.No further air assessment is needed.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

_____ _____

TLL, x DATE

1. General Information

- Action Location
Base: F.E. WARREN AFB
State: Wyoming
County(s): Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: GBSD Deployment

- Project Number/s (if applicable): GBSD Deployment

- Projected Action Start Date: 1 / 2023

- Action Purpose and Need:
GBSD Deployment

- Action Description:
GBSD Deployment

- Point of Contact
Name: TLL
Title: x
Organization: x
Email: x
Phone Number: x

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	Construction of One Laydown Area
3.	Degreaser	Laydown Area - Degreasers
4.	Heating	Heating of One Laydown Area
5.	Tanks	Tank at a Laydown Area

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
County: Laramie; Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Construction of One Laydown Area

- Activity Description:
Number of sites - Areas (sqft)
InfrastructureTypical Peak Size (acres) Grading Building Construction Paving Trenching Architectural Coatings
Laydown Areas 2 4 5.0 871,200 87,120 217,800 1,867 0

- Activity Start Date
Start Month: 1
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 12
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.205491
SO_x	0.003560
NO_x	1.310295
CO	1.293739
PM 10	0.840251

Pollutant	Total Emissions (TONs)
PM 2.5	0.048997
Pb	0.000000
NH_3	0.001548
CO_2e	357.7

2.1 Site Grading Phase

2.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

2.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 65300
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 1000

- Site Grading Default Settings

Default Settings Used: No

Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Scrapers Composite	1	8
Tractors/Loaders/Backhoes Composite	2	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20

Average Hauling Truck Round Trip Commute (mile): 120

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 0

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478

LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.2 Trenching/Excavating Phase

2.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

2.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 934
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 1000

- Trenching Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20
Average Hauling Truck Round Trip Commute (mile): 120

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 120

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)

2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.3 Building Construction Phase

2.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date

Start Month: 1

Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 4
Number of Days: 0

2.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Commercial or Retail
Area of Building (ft^2): 43560
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	8
Forklifts Composite	1	8
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 120

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 0

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips
Average Vendor Round Trip Commute (mile): 60

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

2.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Cranes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Forklifts Composite								

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0258	0.0006	0.1108	0.2145	0.0034	0.0034	0.0023	54.454
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0320	0.0006	0.2612	0.2683	0.0103	0.0103	0.0028	61.065
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.32 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.32 / 1000): Conversion Factor ft^3 to trips (0.32 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.05 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.05 / 1000): Conversion Factor ft^3 to trips (0.05 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.4 Paving Phase

2.4.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

2.4.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 43560

- Paving Default Settings

Default Settings Used: No

Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Pavers Composite	1	8
Paving Equipment Composite	1	8
Rollers Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 60

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 0

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.4.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027

LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.4.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

3. Degreaser

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Laydown Area - Degreasers

- Activity Description:
Field Depot - Degreasers

- Activity Start Date
Start Month: 1
Start Year: 2024

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.814125
SO_x	0.000000
NO_x	0.000000
CO	0.000000
PM 10	0.000000

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.000000
Pb	0.000000
NH_3	0.000000
CO_2e	0.0

3.2 Degreaser Assumptions

- Degreaser
Net solvent usage (total less recycle) (gallons/year): 250

- Default Settings Used: Yes

- Degreaser Consumption
Solvent used: Mineral Spirits CAS#64475-85-0 (default)
Specific gravity of solvent: 0.78 (default)
Solvent VOC content (%): 100 (default)
Efficiency of control device (%): 0 (default)

3.3 Degreaser Formula(s)

- Degreaser Emissions per Year
DE_{VOC}= (VOC / 100) * NS * SG * 8.35 * (1 - (CD / 100)) / 2000

DE_{VOC}: Degreaser VOC Emissions (TONs per Year)
VOC: Solvent VOC content (%)
(VOC / 100): Conversion Factor percent to decimal
NS: Net solvent usage (total less recycle) (gallons/year)
SG: Specific gravity of solvent

8.35: Conversion Factor the density of water
CD: Efficiency of control device (%)
(1 - (CD / 100)): Conversion Factor percent to decimal (Not effected by control device)
2000: Conversion Factor pounds to tons

4. Heating

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Heating of One Laydown Area

- Activity Description:
Laydown Ares: 15,000 sqft

- Activity Start Date
Start Month: 1
Start Year: 2023

- Activity End Date
Indefinite: No
End Month: 12
End Year: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.003622
SO_x	0.000065
NO_x	0.047090
CO	0.027168
PM 10	0.002536

Pollutant	Total Emissions (TONs)
PM 2.5	0.002536
Pb	0.000000
NH_3	0.000000
CO_2e	45.9

4.2 Heating Assumptions

- Heating
Heating Calculation Type: Heat Energy Requirement Method

- Heat Energy Requirement Method
Area of floorspace to be heated (ft^2): 7500
Type of fuel: LPG (Propane)
Type of boiler/furnace: Commercial/Institutional (0.3 - 9.9 MMBtu/hr)
Heat Value (MMBtu/gal): 0.094
Energy Intensity (MMBtu/ft^2): 0.0908

- Default Settings Used: Yes

- Boiler/Furnace Usage
Operating Time Per Year (hours): 900 (default)

4.3 Heating Emission Factor(s)

- Heating Emission Factors (lb/1000 gal)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
1	0.018	13	7.5	0.7	0.7			12664

4.4 Heating Formula(s)

- Heating Fuel Consumption gallons per Year

$FC_{HER} = HA * EI / HV / 1000$

FC_{HER}: Fuel Consumption for Heat Energy Requirement Method
HA: Area of floorspace to be heated (ft^2)
EI: Energy Intensity Requirement ($MMBtu/ft^2$)
HV: Heat Value (MMBtu/gal)
1000: Conversion Factor

- Heating Emissions per Year

$HE_{POL} = FC * EF_{POL} / 2000$

HE_{POL}: Heating Emission Emissions (TONs)
FC: Fuel Consumption
EF_{POL}: Emission Factor for Pollutant
2000: Conversion Factor pounds to tons

5. Tanks

5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Tank at a Laydown Area

- Activity Description:

- Activity Start Date
Start Month: 1
Start Year: 2023

- Activity End Date
Indefinite: No
End Month: 12
End Year: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.003376
SO_x	0.000000
NO_x	0.000000
CO	0.000000
PM 10	0.000000

Pollutant	Total Emissions (TONs)
PM 2.5	0.000000
Pb	0.000000
NH_3	0.000000
CO_2e	0.0

5.2 Tanks Assumptions

- Chemical
Chemical Name: Fuel oil no. 2
Chemical Category: Petroleum Distillates
Chemical Density: 7.1
Vapor Molecular Weight (lb/lb-mole): 130
Stock Vapor Density (lb/ft^3): 0.000129553551395334
Vapor Pressure: 0.0055
Vapor Space Expansion Factor (dimensionless): 0.068

- Tank
Type of Tank: Horizontal Tank
Tank Length (ft): 20
Tank Diameter (ft): 10
Annual Net Throughput (gallon/year): 25000

5.3 Tank Formula(s)

- Vapor Space Volume
$VSV = (PI / 4) * D^2 * L / 2$

VSV: Vapor Space Volume (ft^3)

PI: PI Math Constant
D^2: Tank Diameter (ft)
L: Tank Length (ft)
2: Convertion Factor (Vapor Space Volume is assumed to be one-half of the tank volume)

- Vented Vapor Saturation Factor

VVSF = 1 / (1 + (0.053 * VP * L / 2))

VVSF: Vented Vapor Saturation Factor (dimensionless)
0.053: Constant
VP: Vapor Pressure (psia)
L: Tank Length (ft)

- Standing Storage Loss per Year

SSL_{VOC} = 365 * VSV * SVD * VSEF * VVSF / 2000

SSL_{VOC}: Standing Storage Loss Emissions (TONs)
365: Number of Daily Events in a Year (Constant)
VSV: Vapor Space Volume (ft^3)
SVD: Stock Vapor Density (lb/ft^3)
VSEF: Vapor Space Expansion Factor (dimensionless)
VVSF: Vented Vapor Saturation Factor (dimensionless)
2000: Conversion Factor pounds to tons

- Number of Turnovers per Year

NT = (7.48 * ANT) / ((PI / 4.0) * D * L)

NT: Number of Turnovers per Year
7.48: Constant
ANT: Annual Net Throughput
PI: PI Math Constant
D^2: Tank Diameter (ft)
L: Tank Length (ft)

- Working Loss Turnover (Saturation) Factor per Year

WLSF = (18 + NT) / (6 * NT)

WLSF: Working Loss Turnover (Saturation) Factor per Year
18: Constant
NT: Number of Turnovers per Year
6: Constant

- Working Loss per Year

WL_{VOC} = 0.0010 * VMW * VP * ANT * WLSF / 2000

0.0010: Constant
VMW: Vapor Molecular Weight (lb/lb-mole)
VP: Vapor Pressure (psia)
ANT: Annual Net Throughput
WLSF: Working Loss Turnover (Saturation) Factor
2000: Conversion Factor pounds to tons

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: F.E. WARREN AFB
State: Wyoming
County(s): Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: GBSD Deployment

c. Project Number/s (if applicable): GBSD Deployment

d. Projected Action Start Date: 1 / 2023

e. Action Description:

GBSD Deployment

f. Point of Contact:

Name:	TLL
Title:	x
Organization:	x
Email:	x
Phone Number:	x

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.321	250	No
NOx	2.437	250	No
CO	1.763	250	No
SOx	0.006	250	No
PM 10	5.290	250	No
PM 2.5	0.087	250	No
Pb	0.000	25	No
NH3	0.005	250	No
CO2e	819.3		

2024 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	250	No
NOx	0.000	250	No
CO	0.000	250	No
SOx	0.000	250	No
PM 10	0.000	250	No
PM 2.5	0.000	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	0.0		

None of estimated annual net emissions associated with this action are above the insignificance indicators, indicating no significant impact to air quality.Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs.No further air assessment is needed.

_____ _____

TLL, x DATE

1. General Information

- Action Location
Base: F.E. WARREN AFB
State: Wyoming
County(s): Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: GBSD Deployment

- Project Number/s (if applicable): GBSD Deployment

- Projected Action Start Date: 1 / 2023

- Action Purpose and Need:
GBSD Deployment

- Action Description:
GBSD Deployment

- Point of Contact
Name: TLL
Title: x
Organization: x
Email: x
Phone Number: x

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	Workforce Hubs
3.	Heating	Heating of Workforce Hubs

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
County: Laramie; Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Workforce Hubs

- Activity Description:
Workforce Hub
Phase Duration Pieces of Equipment Area
Building Construction 3 5 130680
Grading 2 3 1306800
Paving 1 3 174240

- Activity Start Date
Start Month: 1
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 4
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.299301
SO_x	0.005236
NO_x	2.156303
CO	1.600898
PM 10	5.274437

Pollutant	Total Emissions (TONs)
PM 2.5	0.072136
Pb	0.000000
NH_3	0.005095
CO_2e	546.1

2.1 Site Grading Phase

2.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

2.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 435600

Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 5000

- Site Grading Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	2	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20
Average Hauling Truck Round Trip Commute (mile): 120

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 0

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.0

									43
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works

NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.2 Building Construction Phase

2.2.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 4
Number of Days: 0

2.2.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Commercial or Retail
Area of Building (ft^2): 217800
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	7
Forklifts Composite	2	7
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 120

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 0

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 60

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

2.2.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0258	0.0006	0.1108	0.2145	0.0034	0.0034	0.0023	54.454
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0320	0.0006	0.2612	0.2683	0.0103	0.0103	0.0028	61.065
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0242	0.0003	0.1487	0.1761	0.0067	0.0067	0.0021	25.657

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.2.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.32 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.32 / 1000): Conversion Factor ft^3 to trips (0.32 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase

$VMT_{VT} = BA * BH * (0.05 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.05 / 1000): Conversion Factor ft^3 to trips (0.05 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

2.3 Paving Phase

2.3.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

2.3.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 108900

- Paving Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Off-Highway Trucks Composite	1	8
Pavers Composite	1	8
Paving Equipment Composite	2	6
Rollers Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 60

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 0

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.3.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61

Rubber Tired Dozers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.3.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / $acre)^2$ / acre)

3. Heating

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Heating of Workforce Hubs

- Activity Description:
Worforce Hubs: 60,000 sqft

- Activity Start Date
Start Month: 1
Start Year: 2023

- Activity End Date
Indefinite: No
End Month: 12
End Year: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.021574
SO_x	0.000388
NO_x	0.280468
CO	0.161809
PM 10	0.015102

Pollutant	Total Emissions (TONs)
PM 2.5	0.015102
Pb	0.000000
NH_3	0.000000
CO_2e	273.2

3.2 Heating Assumptions

- Heating
Heating Calculation Type: Heat Energy Requirement Method

- Heat Energy Requirement Method
Area of floorspace to be heated (ft^2): 60000
Type of fuel: LPG (Propane)
Type of boiler/furnace: Commercial/Institutional (0.3 - 9.9 MMBtu/hr)
Heat Value (MMBtu/gal): 0.094
Energy Intensity (MMBtu/ft^2): 0.0676

- Default Settings Used: Yes

- Boiler/Furnace Usage
Operating Time Per Year (hours): 900 (default)

3.3 Heating Emission Factor(s)

- Heating Emission Factors (lb/1000 gal)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
1	0.018	13	7.5	0.7	0.7			12664

3.4 Heating Formula(s)

- Heating Fuel Consumption gallons per Year

$FC_{HER} = HA * EI / HV / 1000$

FC_{HER}: Fuel Consumption for Heat Energy Requirement Method
HA: Area of floorspace to be heated (ft^2)
EI: Energy Intensity Requirement ($MMBtu/ft^2$)
HV: Heat Value (MMBtu/gal)
1000: Conversion Factor

- Heating Emissions per Year

$HE_{POL} = FC * EF_{POL} / 2000$

HE_{POL}: Heating Emission Emissions (TONs)
FC: Fuel Consumption
EF_{POL}: Emission Factor for Pollutant
2000: Conversion Factor pounds to tons

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: F.E. WARREN AFB
State: Wyoming
County(s): Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: GBSD Deployment

c. Project Number/s (if applicable): GBSD Deployment

d. Projected Action Start Date: 1 / 2023

e. Action Description:

GBSD Deployment

f. Point of Contact:

Name:	TLL
Title:	x
Organization:	x
Email:	x
Phone Number:	x

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.003	250	No
NOx	0.015	250	No
CO	0.014	250	No
SOx	0.000	250	No
PM 10	0.006	250	No
PM 2.5	0.001	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	3.2		

2024 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	250	No
NOx	0.000	250	No
CO	0.000	250	No
SOx	0.000	250	No
PM 10	0.000	250	No
PM 2.5	0.000	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	0.0		

None of estimated annual net emissions associated with this action are above the insignificance indicators, indicating no significant impact to air quality.Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs.No further air assessment is needed.

_____ _____

TLL, x DATE

1. General Information

- Action Location
Base: F.E. WARREN AFB
State: Wyoming
County(s): Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: GBSD Deployment

- Project Number/s (if applicable): GBSD Deployment

- Projected Action Start Date: 1 / 2023

- Action Purpose and Need:
GBSD Deployment

- Action Description:
GBSD Deployment

- Point of Contact
Name: TLL
Title: x
Organization: x
Email: x
Phone Number: x

- Activity List:

	Activity Type	Activity Title
2.	Construction / Demolition	Utility Corridor

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
County: Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Utility Corridor

- Activity Description:
10560 square feet of trenching

- Activity Start Date
Start Month: 1
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 1
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.002568
SO_x	0.000031
NO_x	0.014593
CO	0.014337
PM 10	0.005502

Pollutant	Total Emissions (TONs)
PM 2.5	0.000652
Pb	0.000000
NH_3	0.000019
CO_2e	3.2

2.1 Trenching/Excavating Phase

2.1.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 0
Number of Days: 1

2.1.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 10560
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings

Default Settings Used: No

Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Off-Highway Tractors Composite	1	8
Other Construction Equipment Composite	2	4
Rubber Tired Dozers Composite	1	12
Trenchers Composite	1	12

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20

Average Hauling Truck Round Trip Commute (mile): 120

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 120

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.662	000.007	000.706	005.928	000.020	000.017		000.033	00360.825
LDGT	000.830	000.010	001.213	008.881	000.021	000.019		000.034	00482.466
HDGV	001.240	000.015	003.111	025.380	000.052	000.046		000.044	00753.044
LDDV	000.280	000.003	000.329	003.391	000.007	000.006		000.008	00364.565
LDDT	000.576	000.005	000.881	006.881	000.008	000.008		000.008	00568.730
HDDV	001.069	000.014	010.551	003.201	000.375	000.345		000.032	01600.228
MC	002.439	000.008	000.905	015.402	000.030	000.026		000.052	00399.849

2.1.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)

20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: F.E. WARREN AFB
State: Wyoming
County(s): Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: GBSD Deployment

c. Project Number/s (if applicable): GBSD Deployment

d. Projected Action Start Date: 1 / 2023

e. Action Description:

GBSD Deployment

f. Point of Contact:

Name:	TLL
Title:	x
Organization:	x
Email:	x
Phone Number:	x

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.583	250	No
NOx	6.839	250	No
CO	13.346	250	No
SOx	0.028	250	No
PM 10	6.775	250	No
PM 2.5	0.262	250	No
Pb	0.000	25	No
NH3	0.020	250	No
CO2e	2696.0		

2024 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	250	No
NOx	0.000	250	No
CO	0.000	250	No
SOx	0.000	250	No
PM 10	0.000	250	No
PM 2.5	0.000	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	0.0		

None of estimated annual net emissions associated with this action are above the insignificance indicators, indicating no significant impact to air quality.Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs.No further air assessment is needed.

_____ _____

TLL, x DATE

1. General Information

- Action Location
Base: F.E. WARREN AFB
State: Wyoming
County(s): Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: GBSD Deployment

- Project Number/s (if applicable): GBSD Deployment

- Projected Action Start Date: 1 / 2023

- Action Purpose and Need:
GBSD Deployment

- Action Description:
GBSD Deployment

- Point of Contact
Name: TLL
Title: x
Organization: x
Email: x
Phone Number: x

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	One Year of Utility Work

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
County: Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: One Year of Utility Work

- Activity Description:
Number of sites - Areas (sqft)
InfrastructureTypical Peak Size (acres) Grading Building Construction Paving Trenching Architectural Coatings Demolition
Utility Corridors 20 25 1.0 0 0 0 50,000 0 0

- Activity Start Date
Start Month: 1
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 12
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	1.582581
SO_x	0.027630
NO_x	6.839372
CO	13.346225
PM 10	6.775348

Pollutant	Total Emissions (TONs)
PM 2.5	0.262360
Pb	0.000000
NH_3	0.020209
CO_2e	2696.0

2.1 Trenching/Excavating Phase

2.1.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 12
Number of Days: 0

2.1.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft^2): 54548
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: No
Average Day(s) worked per week: 5

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	10	8
Other General Industrial Equipmen Composite	5	8
Tractors/Loaders/Backhoes Composite	5	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20
Average Hauling Truck Round Trip Commute (mile): 120

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 120

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.662	000.007	000.706	005.928	000.020	000.017		000.033	00360.825
LDGT	000.830	000.010	001.213	008.881	000.021	000.019		000.034	00482.466
HDGV	001.240	000.015	003.111	025.380	000.052	000.046		000.044	00753.044
LDDV	000.280	000.003	000.329	003.391	000.007	000.006		000.008	00364.565
LDDT	000.576	000.005	000.881	006.881	000.008	000.008		000.008	00568.730
HDDV	001.069	000.014	010.551	003.201	000.375	000.345		000.032	01600.228
MC	002.439	000.008	000.905	015.402	000.030	000.026		000.052	00399.849

2.1.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: F.E. WARREN AFB
State: Wyoming
County(s): Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: GBSD Deployment

c. Project Number/s (if applicable): GBSD Deployment

d. Projected Action Start Date: 1 / 2023

e. Action Description:

GBSD Deployment

f. Point of Contact:

Name:	TLL
Title:	x
Organization:	x
Email:	x
Phone Number:	x

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.904	250	No
NOx	5.312	250	No
CO	26.444	250	No
SOx	0.022	250	No
PM 10	6.597	250	No
PM 2.5	0.188	250	No
Pb	0.000	25	No
NH3	0.113	250	No
CO2e	2711.5		

2024

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	3.085	250	No
NOx	6.620	250	No
CO	28.501	250	No
SOx	0.026	250	No
PM 10	10.247	250	No
PM 2.5	0.239	250	No
Pb	0.000	25	No
NH3	0.115	250	No
CO2e	3101.9		

2025

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	3.352	250	No
NOx	6.248	250	No
CO	28.451	250	No
SOx	0.026	250	No
PM 10	17.947	250	No
PM 2.5	0.217	250	No
Pb	0.000	25	No
NH3	0.115	250	No
CO2e	3086.1		

2026

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.445	250	No

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

NOx	4.567	250	No
CO	26.269	250	No
SOx	0.021	250	No
PM 10	0.151	250	No
PM 2.5	0.143	250	No
Pb	0.000	25	No
NH3	0.114	250	No
CO2e	2576.2		

2027

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	3.459	250	No
NOx	4.977	250	No
CO	26.828	250	No
SOx	0.022	250	No
PM 10	3.052	250	No
PM 2.5	0.164	250	No
Pb	0.000	25	No
NH3	0.114	250	No
CO2e	2713.9		

2028

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	4.083	250	No
NOx	4.025	250	No
CO	25.555	250	No
SOx	0.019	250	No
PM 10	0.159	250	No
PM 2.5	0.129	250	No
Pb	0.000	25	No
NH3	0.113	250	No
CO2e	2420.1		

2029

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.192	250	No
NOx	3.122	250	No
CO	24.157	250	No
SOx	0.016	250	No
PM 10	0.102	250	No
PM 2.5	0.095	250	No
Pb	0.000	25	No
NH3	0.112	250	No
CO2e	2133.9		

2030

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	3.007	250	No
NOx	3.746	250	No
CO	25.234	250	No
SOx	0.019	250	No
PM 10	0.346	250	No
PM 2.5	0.123	250	No
Pb	0.000	25	No
NH3	0.113	250	No
CO2e	2384.7		

2031

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.946	250	No
NOx	1.749	250	No
CO	22.070	250	No
SOx	0.012	250	No
PM 10	0.056	250	No
PM 2.5	0.048	250	No
Pb	0.000	25	No
NH3	0.111	250	No
CO2e	1708.6		

2032

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.946	250	No
NOx	1.749	250	No
CO	22.070	250	No
SOx	0.012	250	No
PM 10	0.056	250	No
PM 2.5	0.048	250	No
Pb	0.000	25	No
NH3	0.111	250	No
CO2e	1708.6		

2033

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.330	250	No
NOx	3.927	250	No
CO	2.853	250	No
SOx	0.537	250	No
PM 10	0.667	250	No
PM 2.5	0.667	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	1912.2		

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

2034 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.330	250	No
NOx	3.927	250	No
CO	2.853	250	No
SOx	0.537	250	No
PM 10	0.667	250	No
PM 2.5	0.667	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	1912.2		

None of estimated annual net emissions associated with this action are above the insignificance indicators, indicating no significant impact to air quality.Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs.No further air assessment is needed.

TLL, x

DATE

1. General Information

- Action Location
Base: F.E. WARREN AFB
State: Wyoming
County(s): Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: GBSD Deployment

- Project Number/s (if applicable): GBSD Deployment

- Projected Action Start Date: 1 / 2023

- Action Purpose and Need:
GBSD Deployment

- Action Description:
GBSD Deployment

- Point of Contact
Name: TLL
Title: x
Organization: x
Email: x
Phone Number: x

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	On-Base Construction
3.	Emergency Generator	New-On Base Generators
4.	Personnel	Addtional Personel During Transition
5.	Heating	Heating of On-Base Facilities
6.	Degreaser	Field Depot - Degreasers
7.	Emergency Generator	Generators at Communication Towers

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
County: Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: On-Base Construction

- Activity Description:
On-Base Construction
Integrated Command Center 1 1 2.2 96,000 48,000 24,000 620 48,000 0
Integrated Training Complex 1 1 3.3 144,000 72,000 36,000 759 72,000 0
Consolidated Maintenance Complex 1 1 8.8 383,302 191,651 95,826 1,238 191,651 0
Missile-Handling Administrative Building 1 1 0.2 9,200 4,600 2,300 192 4,600 0
Missile Transfer and TE Storage Facility 1 1 0.1 5,000 2,500 1,250 141 2,500 0
PSRE Storage Facility 1 1 0.2 10,000 5,000 2,500 200 5,000 0
Vehicle Storage Facility 1 1 1.0 44,000 22,000 11,000 420 22,000 0
Field Depot 1 1 0.2 10,000 5,000 2,500 200 5,000 0
Operations Group Facility 1 1 1.6 69,200 34,600 17,300 526 34,600 0
Vehicle Storage Facility 1 1 0.9 40,000 20,000 10,000 400 20,000 0
Security Trainer 1 1 1.0 43,560 1,000 43,560 417 1,000 0
Total 854,262 406,351 246,236 5,113 406,351 0
34,600

- Activity Start Date
Start Month: 1
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 12
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	9.034327
SO_x	0.072759
NO_x	24.237151
CO	31.235382
PM 10	21.429048

Pollutant	Total Emissions (TONs)
PM 2.5	0.970196
Pb	0.000000
NH_3	0.017984
CO_2e	7045.2

2.1 Site Grading Phase

2.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 2

Number of Days: 0

2.1.2 Site Grading Phase Assumptions

- General Site Grading Information

Area of Site to be Graded (ft^2): 854262
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings

Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	10	8
Graders Composite	10	8
Other Construction Equipment Composite	10	8
Rubber Tired Dozers Composite	10	8
Scrapers Composite	3	8
Tractors/Loaders/Backhoes Composite	30	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20
Average Hauling Truck Round Trip Commute (mile): 20

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**

Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.2 Trenching/Excavating Phase

2.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

2.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 5113
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	10	8
Other General Industrial Equipmen Composite	10	8
Tractors/Loaders/Backhoes Composite	10	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20

Average Hauling Truck Round Trip Commute (mile): 20

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

2.3 Building Construction Phase

2.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 12
Number of Days: 0

2.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 406351
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	10	7
Forklifts Composite	20	7
Tractors/Loaders/Backhoes Composite	10	8
Welders Composite	10	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips
Average Vendor Round Trip Commute (mile): 40

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

2.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0258	0.0006	0.1108	0.2145	0.0034	0.0034	0.0023	54.454
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0242	0.0003	0.1487	0.1761	0.0067	0.0067	0.0021	25.657

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.4 Architectural Coatings Phase

2.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration

Number of Month: 2
Number of Days: 0

2.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 406351
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase
$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

2.5 Paving Phase

2.5.1 Paving Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration

Number of Month: 2
Number of Days: 0

2.5.2 Paving Phase Assumptions

- General Paving Information

Paving Area (ft^2): 246236

- Paving Default Settings

Default Settings Used: No
Average Day(s) worked per week: 6

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	10	8
Paving Equipment Composite	20	6
Rollers Composite	20	6
Tractors/Loaders/Backhoes Composite	10	7

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

2.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / $acre)^2$ / acre)

3. Emergency Generator

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: New-On Base Generators

- Activity Description:
New-On Base Generators

- Activity Start Date
Start Month: 1
Start Year: 2024

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.627750
SO_x	0.528750
NO_x	2.587500
CO	1.728000
PM 10	0.564750

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.564750
Pb	0.000000
NH_3	0.000000
CO_2e	299.3

3.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 9

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 500
Average Operating Hours Per Year (hours): 100

3.3 Emergency Generator Emission Factor(s)

- Emergency Generators Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251			1.33

3.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

4. Personnel

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Addtional Personel During Transition

- Activity Description:
800 Addtional Personel During Transition

- Activity Start Date
Start Month: 1
Start Year: 2023

- Activity End Date
Indefinite: No
End Month: 12
End Year: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	1.945748
SO_x	0.012046
NO_x	1.749281
CO	22.070049
PM 10	0.055696

Pollutant	Total Emissions (TONs)
PM 2.5	0.048171
Pb	0.000000
NH_3	0.110884
CO_2e	1708.6

4.2 Personnel Assumptions

- Number of Personnel
Active Duty Personnel: 0
Civilian Personnel: 800
Support Contractor Personnel: 0
Air National Guard (ANG) Personnel: 0
Reserve Personnel: 0

- Default Settings Used: Yes

- Average Personnel Round Trip Commute (mile): 20 (default)

- Personnel Work Schedule
Active Duty Personnel: 5 Days Per Week (default)
Civilian Personnel: 5 Days Per Week (default)
Support Contractor Personnel: 5 Days Per Week (default)
Air National Guard (ANG) Personnel: 4 Days Per Week (default)
Reserve Personnel: 4 Days Per Month (default)

4.3 Personnel On Road Vehicle Mixture

- On Road Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	37.55	60.32	0	0.03	0.2	0	1.9
GOVs	54.49	37.73	4.67	0	0	3.11	0

4.4 Personnel Emission Factor(s)

- On Road Vehicle Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.349	000.002	000.259	003.854	000.010	000.009		000.023	00315.478
LDGT	000.411	000.003	000.442	005.129	000.013	000.011		000.024	00407.005
HDGV	000.663	000.005	001.074	014.959	000.029	000.026		000.044	00750.027
LDDV	000.141	000.003	000.141	002.413	000.004	000.004		000.008	00303.043
LDDT	000.274	000.004	000.397	004.094	000.007	000.006		000.008	00430.968
HDDV	000.679	000.013	006.368	002.139	000.173	000.159		000.031	01515.628
MC	002.352	000.003	000.879	013.798	000.028	000.025		000.055	00400.636

4.5 Personnel Formula(s)

- Personnel Vehicle Miles Travel for Work Days per Year

$VMT_P = NP * WD * AC$

VMT_P: Personnel Vehicle Miles Travel (miles/year)
NP: Number of Personnel
WD: Work Days per Year
AC: Average Commute (miles)

- Total Vehicle Miles Travel per Year

$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$

VMT_{Total}: Total Vehicle Miles Travel (miles)
VMT_{AD}: Active Duty Personnel Vehicle Miles Travel (miles)
VMT_C: Civilian Personnel Vehicle Miles Travel (miles)
VMT_{SC}: Support Contractor Personnel Vehicle Miles Travel (miles)
VMT_{ANG}: Air National Guard Personnel Vehicle Miles Travel (miles)
VMT_{AFRC}: Reserve Personnel Vehicle Miles Travel (miles)

- Vehicle Emissions per Year

$V_{POL} = (VMT_{Total} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{Total}: Total Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Personnel On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

5. Heating

5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Heating of On-Base Facilities

- Activity Description:
Heating of On-Base Facilities
Integrated Command Center 9,000
Integrated Training Complex 50,000
Consolidated Maintenance Complex 191,651
Missile-Handling Administrative Building 3,000
Missile Transfer and TE Storage Facility 21,000
PSRE Storage Facility 5,000
Vehicle Storage Facility 20,000
Field Depot 5,000
Operations Group Facility 34,600
Total 34,600

- Activity Start Date
Start Month: 1
Start Year: 2024

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.073688
SO_x	0.008039
NO_x	1.339791
CO	1.125424
PM 10	0.101824

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.101824
Pb	0.000000
NH_3	0.000000
CO_2e	1613.0

5.2 Heating Assumptions

- Heating
Heating Calculation Type: Heat Energy Requirement Method

- Heat Energy Requirement Method
Area of floorspace to be heated (ft^2): 360251
Type of fuel: Natural Gas
Type of boiler/furnace: Industrial (10 - 250 MMBtu/hr)
Heat Value ($MMBtu/ft^3$): 0.00105

Energy Intensity (MMBtu/ft^2): 0.0781

- Default Settings Used: Yes

- Boiler/Furnace Usage

Operating Time Per Year (hours): 900 (default)

5.3 Heating Emission Factor(s)

- Heating Emission Factors (lb/1000000 scf)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
5.5	0.6	100	84	7.6	7.6			120390

5.4 Heating Formula(s)

- Heating Fuel Consumption ft^3 per Year

FC_{HER}= HA * EI / HV / 1000000

FC_{HER}: Fuel Consumption for Heat Energy Requirement Method
HA: Area of floorspace to be heated (ft^2)
EI: Energy Intensity Requirement (MMBtu/ft^2)
HV: Heat Value (MMBTU/ft^3)
1000000: Conversion Factor

- Heating Emissions per Year

HE_{POL}= FC * EF_{POL} / 2000

HE_{POL}: Heating Emission Emissions (TONs)
FC: Fuel Consumption
EF_{POL}: Emission Factor for Pollutant
2000: Conversion Factor pounds to tons

6. Degreaser

6.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Field Depot - Degreasers

- Activity Description:
Field Depot - Degreasers

- Activity Start Date
Start Month: 1
Start Year: 2024

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	1.628250
SO_x	0.000000
NO_x	0.000000
CO	0.000000
PM 10	0.000000

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.000000
Pb	0.000000
NH_3	0.000000
CO_2e	0.0

6.2 Degreaser Assumptions

- Degreaser
Net solvent usage (total less recycle) (gallons/year): 500

- Default Settings Used: Yes

- Degreaser Consumption
Solvent used: Mineral Spirits CAS#64475-85-0 (default)
Specific gravity of solvent: 0.78 (default)
Solvent VOC content (%): 100 (default)
Efficiency of control device (%): 0 (default)

6.3 Degreaser Formula(s)

- Degreaser Emissions per Year
DE_{VOC}= (VOC / 100) * NS * SG * 8.35 * (1 - (CD / 100)) / 2000

DE_{VOC}: Degreaser VOC Emissions (TONs per Year)
VOC: Solvent VOC content (%)
(VOC / 100): Conversion Factor percent to decimal
NS: Net solvent usage (total less recycle) (gallons/year)
SG: Specific gravity of solvent

8.35: Conversion Factor the density of water
CD: Efficiency of control device (%)
(1 - (CD / 100)): Conversion Factor percent to decimal (Not effected by control device)
2000: Conversion Factor pounds to tons

7. Emergency Generator

7.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Laramie
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Generators at Communication Towers

- Activity Description:
Generators at Communication Towers

- Activity Start Date
Start Month: 1
Start Year: 2024

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.313875
SO_x	0.264375
NO_x	1.293750
CO	0.864000
PM 10	0.282375

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.282375
Pb	0.000000
NH_3	0.000000
CO_2e	149.6

7.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 9

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 250
Average Operating Hours Per Year (hours): 100

7.3 Emergency Generator Emission Factor(s)

- Emergency Generators Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251			1.33

7.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location
Base: HILL AFB
State: Utah
County(s): Davis
Regulatory Area(s): Northern Wasatch Front, UT

- Action Title: GBSD Deployment

- Project Number/s (if applicable): GBSD Deployment

- Projected Action Start Date: 1 / 2023

- Action Purpose and Need:
GBSD Deployment

- Action Description:
GBSD Deployment

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	On-Base Construction
3.	Emergency Generator	New-On Base Generators
4.	Personnel	Addtional Personel During Transition

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
County: Davis
Regulatory Area(s): Northern Wasatch Front, UT

- Activity Title: On-Base Construction

- Activity Description:
On-Base Construction
Number of sites - Areas (sqft)
InfrastructureTypical Peak Size (acres) Grading Building Construction Paving Trenching Architectural Coatings
Storage Igloos 1 1 4.2 184,000 92,000 46,000 858 92,000
Storage Igloos 1 1 5.9 257,400 128,700 64,350 1,015 128,700
Total 441,400 220,700 110,350 1,873 220,700

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Activity Start Date
Start Month: 1
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 12
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	3.101847
SO_x	0.009347
NO_x	3.333546
CO	3.705339
PM 10	8.932996

Pollutant	Total Emissions (TONs)
PM 2.5	0.130989
Pb	0.000000
NH_3	0.004568
CO_2e	927.3

2.1 Site Grading Phase

2.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 2
Number of Days: 0

2.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 441400
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Scrapers Composite	2	8
Tractors/Loaders/Backhoes Composite	3	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.295	000.002	000.223	003.377	000.009	000.008		000.023	00328.308
LDGT	000.367	000.003	000.395	004.664	000.011	000.010		000.024	00423.961
HDGV	000.747	000.005	001.118	016.415	000.026	000.023		000.045	00780.112
LDDV	000.122	000.003	000.135	002.483	000.004	000.004		000.008	00317.249
LDDT	000.269	000.004	000.392	004.291	000.007	000.006		000.008	00451.014
HDDV	000.455	000.013	004.925	001.651	000.170	000.157		000.028	01491.057
MC	002.659	000.003	000.839	013.635	000.029	000.025		000.053	00399.234

2.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)

ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.2 Trenching/Excavating Phase

2.2.1 Trenching / Excavating Phase Timeline Assumptions

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

2.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 1873
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61

Rubber Tired Dozers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.295	000.002	000.223	003.377	000.009	000.008		000.023	00328.308
LDGT	000.367	000.003	000.395	004.664	000.011	000.010		000.024	00423.961
HDGV	000.747	000.005	001.118	016.415	000.026	000.023		000.045	00780.112
LDDV	000.122	000.003	000.135	002.483	000.004	000.004		000.008	00317.249
LDDT	000.269	000.004	000.392	004.291	000.007	000.006		000.008	00451.014
HDDV	000.455	000.013	004.925	001.651	000.170	000.157		000.028	01491.057
MC	002.659	000.003	000.839	013.635	000.029	000.025		000.053	00399.234

2.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.3 Building Construction Phase

2.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 12
Number of Days: 0

2.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 220770
Height of Building (ft): 24
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	7
Forklifts Composite	2	7
Generator Sets Composite	1	8

Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

2.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0258	0.0006	0.1108	0.2145	0.0034	0.0034	0.0023	54.454
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0320	0.0006	0.2612	0.2683	0.0103	0.0103	0.0028	61.065
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0242	0.0003	0.1487	0.1761	0.0067	0.0067	0.0021	25.657

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.295	000.002	000.223	003.377	000.009	000.008		000.023	00328.308
LDGT	000.367	000.003	000.395	004.664	000.011	000.010		000.024	00423.961
HDGV	000.747	000.005	001.118	016.415	000.026	000.023		000.045	00780.112
LDDV	000.122	000.003	000.135	002.483	000.004	000.004		000.008	00317.249
LDDT	000.269	000.004	000.392	004.291	000.007	000.006		000.008	00451.014
HDDV	000.455	000.013	004.925	001.651	000.170	000.157		000.028	01491.057
MC	002.659	000.003	000.839	013.635	000.029	000.025		000.053	00399.234

2.3.4 Building Construction Phase Formula(s)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase

$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.4 Architectural Coatings Phase

2.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 2
Number of Days: 0

2.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 220700
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.295	000.002	000.223	003.377	000.009	000.008		000.023	00328.308
LDGT	000.367	000.003	000.395	004.664	000.011	000.010		000.024	00423.961
HDGV	000.747	000.005	001.118	016.415	000.026	000.023		000.045	00780.112
LDDV	000.122	000.003	000.135	002.483	000.004	000.004		000.008	00317.249
LDDT	000.269	000.004	000.392	004.291	000.007	000.006		000.008	00451.014
HDDV	000.455	000.013	004.925	001.651	000.170	000.157		000.028	01491.057
MC	002.659	000.003	000.839	013.635	000.029	000.025		000.053	00399.234

2.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase
$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

2.5 Paving Phase

2.5.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 2
Number of Days: 0

2.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 110350

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7

Paving Equipment Composite	2	6
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.295	000.002	000.223	003.377	000.009	000.008		000.023	00328.308
LDGT	000.367	000.003	000.395	004.664	000.011	000.010		000.024	00423.961
HDGV	000.747	000.005	001.118	016.415	000.026	000.023		000.045	00780.112
LDDV	000.122	000.003	000.135	002.483	000.004	000.004		000.008	00317.249
LDDT	000.269	000.004	000.392	004.291	000.007	000.006		000.008	00451.014
HDDV	000.455	000.013	004.925	001.651	000.170	000.157		000.028	01491.057
MC	002.659	000.003	000.839	013.635	000.029	000.025		000.053	00399.234

2.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

3. Emergency Generator

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Davis
Regulatory Area(s): Northern Wasatch Front, UT

- Activity Title: New-On Base Generators

- Activity Description:
New-On Base Generators

- Activity Start Date
Start Month: 1
Start Year: 2024

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.090396
SO_x	0.076140
NO_x	0.372600
CO	0.248832
PM 10	0.081324

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.081324
Pb	0.000000
NH_3	0.000000
CO_2e	43.1

3.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 16

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 135
Average Operating Hours Per Year (hours): 30

3.3 Emergency Generator Emission Factor(s)

- Emergency Generators Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251			1.33

3.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

4. Personnel

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Davis
Regulatory Area(s): Northern Wasatch Front, UT

- Activity Title: Addtional Personel During Transition

- Activity Description:
800 Addtional Personel During Transition

- Activity Start Date
Start Month: 1
Start Year: 2024

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.599816
SO_x	0.004111
NO_x	0.530206
CO	6.807880
PM 10	0.016560

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.014906
Pb	0.000000
NH_3	0.037780
CO_2e	606.6

4.2 Personnel Assumptions

- Number of Personnel
Active Duty Personnel: 0
Civilian Personnel: 273
Support Contractor Personnel: 0
Air National Guard (ANG) Personnel: 0
Reserve Personnel: 0

- Default Settings Used: Yes

- Average Personnel Round Trip Commute (mile): 20 (default)

- Personnel Work Schedule

Active Duty Personnel: 5 Days Per Week (default)
Civilian Personnel: 5 Days Per Week (default)
Support Contractor Personnel: 5 Days Per Week (default)
Air National Guard (ANG) Personnel: 4 Days Per Week (default)
Reserve Personnel: 4 Days Per Month (default)

4.3 Personnel On Road Vehicle Mixture

- On Road Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	37.55	60.32	0	0.03	0.2	0	1.9
GOVs	54.49	37.73	4.67	0	0	3.11	0

4.4 Personnel Emission Factor(s)

- On Road Vehicle Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.295	000.002	000.223	003.377	000.009	000.008		000.023	00328.308
LDGT	000.367	000.003	000.395	004.664	000.011	000.010		000.024	00423.961
HDGV	000.747	000.005	001.118	016.415	000.026	000.023		000.045	00780.112
LDDV	000.122	000.003	000.135	002.483	000.004	000.004		000.008	00317.249
LDDT	000.269	000.004	000.392	004.291	000.007	000.006		000.008	00451.014
HDDV	000.455	000.013	004.925	001.651	000.170	000.157		000.028	01491.057
MC	002.659	000.003	000.839	013.635	000.029	000.025		000.053	00399.234

4.5 Personnel Formula(s)

- Personnel Vehicle Miles Travel for Work Days per Year
$VMT_P = NP * WD * AC$

VMT_P: Personnel Vehicle Miles Travel (miles/year)
NP: Number of Personnel
WD: Work Days per Year
AC: Average Commute (miles)

- Total Vehicle Miles Travel per Year
$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$

VMT_{Total}: Total Vehicle Miles Travel (miles)
VMT_{AD}: Active Duty Personnel Vehicle Miles Travel (miles)
VMT_C: Civilian Personnel Vehicle Miles Travel (miles)
VMT_{SC}: Support Contractor Personnel Vehicle Miles Travel (miles)
VMT_{ANG}: Air National Guard Personnel Vehicle Miles Travel (miles)
VMT_{AFRC}: Reserve Personnel Vehicle Miles Travel (miles)

- Vehicle Emissions per Year
$V_{POL} = (VMT_{Total} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{Total}: Total Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Personnel On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: HILL AFB
State: Utah
County(s): Davis
Regulatory Area(s): Northern Wasatch Front, UT

b. Action Title: GBSD Deployment

c. Project Number/s (if applicable): GBSD Deployment

d. Projected Action Start Date: 1 / 2023

e. Action Description:

GBSD Deployment

f. Point of Contact:

Name: TLL
Title: x
Organization: x
Email: x
Phone Number: x

2. Analysis: Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: _____ applicable
__X__ not applicable

Conformity Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Northern Wasatch Front, UT			
VOC	3.102	100	No
NOx	3.334	100	No
CO	3.705		
SOx	0.009		
PM 10	8.933		
PM 2.5	0.131		
Pb	0.000		
NH3	0.005		
CO2e	927.3		

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

2024

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Northern Wasatch Front, UT			
VOC	0.690	100	No
NOx	0.903	100	No
CO	7.057		
SOx	0.080		
PM 10	0.098		
PM 2.5	0.096		
Pb	0.000		
NH3	0.038		
CO2e	649.7		

2025 - (Steady State)

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Northern Wasatch Front, UT			
VOC	0.690	100	No
NOx	0.903	100	No
CO	7.057		
SOx	0.080		
PM 10	0.098		
PM 2.5	0.096		
Pb	0.000		
NH3	0.038		
CO2e	649.7		

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.

_____ _____

TLL, x DATE

1. General Information

- Action Location
Base: HILL AFB
State: Utah
County(s): Davis
Regulatory Area(s): Northern Wasatch Front, UT

- Action Title: GBSD Deployment

- Project Number/s (if applicable): GBSD Deployment

- Projected Action Start Date: 1 / 2023

- Action Purpose and Need:
GBSD Deployment

- Action Description:
GBSD Deployment

- Point of Contact
Name: TLL
Title: x
Organization: x
Email: x
Phone Number: x

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	On-Base Construction
3.	Emergency Generator	New-On Base Generators
4.	Personnel	Addtional Personel During Transition

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
County: Davis
Regulatory Area(s): Northern Wasatch Front, UT

- Activity Title: On-Base Construction

- Activity Description:
On-Base Construction
Number of sites - Areas (sqft)
InfrastructureTypical Peak Size (acres) Grading Building Construction Paving Trenching Architectural Coatings
Storage Igloos 1 1 4.2 184,000 92,000 46,000 858 92,000
Storage Igloos 1 1 5.9 257,400 128,700 64,350 1,015 128,700
Total 441,400 220,700 110,350 1,873 220,700

- Activity Start Date
Start Month: 1
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 12
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	3.101847
SO_x	0.009347
NO_x	3.333546
CO	3.705339
PM 10	8.932996

Pollutant	Total Emissions (TONs)
PM 2.5	0.130989
Pb	0.000000
NH_3	0.004568
CO_2e	927.3

2.1 Site Grading Phase

2.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 2
Number of Days: 0

2.1.2 Site Grading Phase Assumptions

- General Site Grading Information

Area of Site to be Graded (ft^2): 441400
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Scrapers Composite	2	8
Tractors/Loaders/Backhoes Composite	3	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.295	000.002	000.223	003.377	000.009	000.008		000.023	00328.308
LDGT	000.367	000.003	000.395	004.664	000.011	000.010		000.024	00423.961
HDGV	000.747	000.005	001.118	016.415	000.026	000.023		000.045	00780.112
LDDV	000.122	000.003	000.135	002.483	000.004	000.004		000.008	00317.249
LDDT	000.269	000.004	000.392	004.291	000.007	000.006		000.008	00451.014
HDDV	000.455	000.013	004.925	001.651	000.170	000.157		000.028	01491.057
MC	002.659	000.003	000.839	013.635	000.029	000.025		000.053	00399.234

2.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.2 Trenching/Excavating Phase

2.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration

Number of Month: 1
Number of Days: 0

2.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft^2): 1873
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.295	000.002	000.223	003.377	000.009	000.008		000.023	00328.308
LDGT	000.367	000.003	000.395	004.664	000.011	000.010		000.024	00423.961
HDGV	000.747	000.005	001.118	016.415	000.026	000.023		000.045	00780.112
LDDV	000.122	000.003	000.135	002.483	000.004	000.004		000.008	00317.249
LDDT	000.269	000.004	000.392	004.291	000.007	000.006		000.008	00451.014
HDDV	000.455	000.013	004.925	001.651	000.170	000.157		000.028	01491.057
MC	002.659	000.003	000.839	013.635	000.029	000.025		000.053	00399.234

2.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.3 Building Construction Phase

2.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 12
Number of Days: 0

2.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 220770
Height of Building (ft): 24
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	7
Forklifts Composite	2	7
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips
Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

2.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0258	0.0006	0.1108	0.2145	0.0034	0.0034	0.0023	54.454
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0320	0.0006	0.2612	0.2683	0.0103	0.0103	0.0028	61.065
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0242	0.0003	0.1487	0.1761	0.0067	0.0067	0.0021	25.657

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.295	000.002	000.223	003.377	000.009	000.008		000.023	00328.308
LDGT	000.367	000.003	000.395	004.664	000.011	000.010		000.024	00423.961
HDGV	000.747	000.005	001.118	016.415	000.026	000.023		000.045	00780.112
LDDV	000.122	000.003	000.135	002.483	000.004	000.004		000.008	00317.249
LDDT	000.269	000.004	000.392	004.291	000.007	000.006		000.008	00451.014
HDDV	000.455	000.013	004.925	001.651	000.170	000.157		000.028	01491.057
MC	002.659	000.003	000.839	013.635	000.029	000.025		000.053	00399.234

2.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.4 Architectural Coatings Phase

2.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 2
Number of Days: 0

2.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 220700
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.295	000.002	000.223	003.377	000.009	000.008		000.023	00328.308
LDGT	000.367	000.003	000.395	004.664	000.011	000.010		000.024	00423.961
HDGV	000.747	000.005	001.118	016.415	000.026	000.023		000.045	00780.112
LDDV	000.122	000.003	000.135	002.483	000.004	000.004		000.008	00317.249
LDDT	000.269	000.004	000.392	004.291	000.007	000.006		000.008	00451.014
HDDV	000.455	000.013	004.925	001.651	000.170	000.157		000.028	01491.057
MC	002.659	000.003	000.839	013.635	000.029	000.025		000.053	00399.234

2.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase
$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

2.5 Paving Phase

2.5.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 2
Number of Days: 0

2.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 110350

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	2	6
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.295	000.002	000.223	003.377	000.009	000.008		000.023	00328.308
LDGT	000.367	000.003	000.395	004.664	000.011	000.010		000.024	00423.961
HDGV	000.747	000.005	001.118	016.415	000.026	000.023		000.045	00780.112
LDDV	000.122	000.003	000.135	002.483	000.004	000.004		000.008	00317.249
LDDT	000.269	000.004	000.392	004.291	000.007	000.006		000.008	00451.014
HDDV	000.455	000.013	004.925	001.651	000.170	000.157		000.028	01491.057
MC	002.659	000.003	000.839	013.635	000.029	000.025		000.053	00399.234

2.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

3. Emergency Generator

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Davis
Regulatory Area(s): Northern Wasatch Front, UT

- Activity Title: New-On Base Generators

- Activity Description:
New-On Base Generators

- Activity Start Date
Start Month: 1
Start Year: 2024

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.090396
SO_x	0.076140
NO_x	0.372600
CO	0.248832
PM 10	0.081324

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.081324
Pb	0.000000
NH_3	0.000000
CO_2e	43.1

3.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 16

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 135
Average Operating Hours Per Year (hours): 30

3.3 Emergency Generator Emission Factor(s)

- Emergency Generators Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251			1.33

3.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

4. Personnel

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Davis
Regulatory Area(s): Northern Wasatch Front, UT

- Activity Title: Addtional Personel During Transition

- Activity Description:
800 Addtional Personel During Transition

- Activity Start Date
Start Month: 1
Start Year: 2024

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.599816
SO_x	0.004111
NO_x	0.530206
CO	6.807880
PM 10	0.016560

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.014906
Pb	0.000000
NH_3	0.037780
CO_2e	606.6

4.2 Personnel Assumptions

- Number of Personnel
Active Duty Personnel: 0
Civilian Personnel: 273
Support Contractor Personnel: 0
Air National Guard (ANG) Personnel: 0
Reserve Personnel: 0

- Default Settings Used: Yes

- Average Personnel Round Trip Commute (mile): 20 (default)

- Personnel Work Schedule
Active Duty Personnel: 5 Days Per Week (default)
Civilian Personnel: 5 Days Per Week (default)
Support Contractor Personnel: 5 Days Per Week (default)
Air National Guard (ANG) Personnel: 4 Days Per Week (default)
Reserve Personnel: 4 Days Per Month (default)

4.3 Personnel On Road Vehicle Mixture

- On Road Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	37.55	60.32	0	0.03	0.2	0	1.9
GOVs	54.49	37.73	4.67	0	0	3.11	0

4.4 Personnel Emission Factor(s)

- On Road Vehicle Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.295	000.002	000.223	003.377	000.009	000.008		000.023	00328.308
LDGT	000.367	000.003	000.395	004.664	000.011	000.010		000.024	00423.961
HDGV	000.747	000.005	001.118	016.415	000.026	000.023		000.045	00780.112
LDDV	000.122	000.003	000.135	002.483	000.004	000.004		000.008	00317.249
LDDT	000.269	000.004	000.392	004.291	000.007	000.006		000.008	00451.014
HDDV	000.455	000.013	004.925	001.651	000.170	000.157		000.028	01491.057
MC	002.659	000.003	000.839	013.635	000.029	000.025		000.053	00399.234

4.5 Personnel Formula(s)

- Personnel Vehicle Miles Travel for Work Days per Year

$VMT_P = NP * WD * AC$

VMT_P: Personnel Vehicle Miles Travel (miles/year)
NP: Number of Personnel
WD: Work Days per Year
AC: Average Commute (miles)

- Total Vehicle Miles Travel per Year

$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$

VMT_{Total}: Total Vehicle Miles Travel (miles)
VMT_{AD}: Active Duty Personnel Vehicle Miles Travel (miles)
VMT_C: Civilian Personnel Vehicle Miles Travel (miles)
VMT_{SC}: Support Contractor Personnel Vehicle Miles Travel (miles)
VMT_{ANG}: Air National Guard Personnel Vehicle Miles Travel (miles)
VMT_{AFRC}: Reserve Personnel Vehicle Miles Travel (miles)

- Vehicle Emissions per Year

$V_{POL} = (VMT_{Total} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{Total}: Total Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Personnel On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location
Base: HILL AFB
State: Utah
County(s): Davis
Regulatory Area(s): Northern Wasatch Front, UT; Salt Lake City, UT

- Action Title: GBSD Deployment

- Project Number/s (if applicable): GBSD Deployment

- Projected Action Start Date: 1 / 2023

- Action Purpose and Need:
GBSD Deployment

- Action Description:
GBSD Deployment

- Point of Contact
Name: TLL
Title: x
Organization: x
Email: x
Phone Number: x

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	On-Base Construction
3.	Emergency Generator	New-On Base Generators
4.	Personnel	Addtional Personel During Transition

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
County: Davis
Regulatory Area(s): Northern Wasatch Front, UT; Salt Lake City, UT

- Activity Title: On-Base Construction

- Activity Description:
On-Base Construction
Number of sites - Areas (sqft)
InfrastructureTypical Peak Size (acres) Grading Building Construction Paving Trenching Architectural Coatings
Storage Igloos 1 1 4.2 184,000 92,000 46,000 858 92,000

- Activity Start Date
Start Month: 1
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 12
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	1.558547
SO_x	0.008155
NO_x	2.923383
CO	3.425613
PM 10	3.788316

Pollutant	Total Emissions (TONs)
PM 2.5	0.117416
Pb	0.000000
NH_3	0.002997
CO_2e	799.7

2.1 Site Grading Phase

2.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 2
Number of Days: 0

2.1.2 Site Grading Phase Assumptions

- General Site Grading Information

Area of Site to be Graded (ft^2): 184000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Scrapers Composite	2	8
Tractors/Loaders/Backhoes Composite	2	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**

Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.295	000.002	000.223	003.377	000.009	000.008		000.023	00328.308
LDGT	000.367	000.003	000.395	004.664	000.011	000.010		000.024	00423.961
HDGV	000.747	000.005	001.118	016.415	000.026	000.023		000.045	00780.112
LDDV	000.122	000.003	000.135	002.483	000.004	000.004		000.008	00317.249
LDDT	000.269	000.004	000.392	004.291	000.007	000.006		000.008	00451.014
HDDV	000.455	000.013	004.925	001.651	000.170	000.157		000.028	01491.057
MC	002.659	000.003	000.839	013.635	000.029	000.025		000.053	00399.234

2.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.2 Trenching/Excavating Phase

2.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration

Number of Month: 1
Number of Days: 0

2.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft^2): 950
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.295	000.002	000.223	003.377	000.009	000.008		000.023	00328.308
LDGT	000.367	000.003	000.395	004.664	000.011	000.010		000.024	00423.961
HDGV	000.747	000.005	001.118	016.415	000.026	000.023		000.045	00780.112
LDDV	000.122	000.003	000.135	002.483	000.004	000.004		000.008	00317.249
LDDT	000.269	000.004	000.392	004.291	000.007	000.006		000.008	00451.014
HDDV	000.455	000.013	004.925	001.651	000.170	000.157		000.028	01491.057
MC	002.659	000.003	000.839	013.635	000.029	000.025		000.053	00399.234

2.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.3 Building Construction Phase

2.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 12
Number of Days: 0

2.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 92000
Height of Building (ft): 24
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips
Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

2.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0258	0.0006	0.1108	0.2145	0.0034	0.0034	0.0023	54.454
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0320	0.0006	0.2612	0.2683	0.0103	0.0103	0.0028	61.065
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0242	0.0003	0.1487	0.1761	0.0067	0.0067	0.0021	25.657

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.295	000.002	000.223	003.377	000.009	000.008		000.023	00328.308
LDGT	000.367	000.003	000.395	004.664	000.011	000.010		000.024	00423.961
HDGV	000.747	000.005	001.118	016.415	000.026	000.023		000.045	00780.112
LDDV	000.122	000.003	000.135	002.483	000.004	000.004		000.008	00317.249
LDDT	000.269	000.004	000.392	004.291	000.007	000.006		000.008	00451.014
HDDV	000.455	000.013	004.925	001.651	000.170	000.157		000.028	01491.057
MC	002.659	000.003	000.839	013.635	000.029	000.025		000.053	00399.234

2.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.4 Architectural Coatings Phase

2.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 2
Number of Days: 0

2.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 92000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.295	000.002	000.223	003.377	000.009	000.008		000.023	00328.308
LDGT	000.367	000.003	000.395	004.664	000.011	000.010		000.024	00423.961
HDGV	000.747	000.005	001.118	016.415	000.026	000.023		000.045	00780.112
LDDV	000.122	000.003	000.135	002.483	000.004	000.004		000.008	00317.249
LDDT	000.269	000.004	000.392	004.291	000.007	000.006		000.008	00451.014
HDDV	000.455	000.013	004.925	001.651	000.170	000.157		000.028	01491.057
MC	002.659	000.003	000.839	013.635	000.029	000.025		000.053	00399.234

2.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase
$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

2.5 Paving Phase

2.5.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 2
Number of Days: 0

2.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 92000

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	2	6
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Excavators Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0614	0.0013	0.2820	0.5096	0.0117	0.0117	0.0055	119.71
Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Scrapers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1640	0.0026	1.0170	0.7431	0.0406	0.0406	0.0148	262.85
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.295	000.002	000.223	003.377	000.009	000.008		000.023	00328.308
LDGT	000.367	000.003	000.395	004.664	000.011	000.010		000.024	00423.961
HDGV	000.747	000.005	001.118	016.415	000.026	000.023		000.045	00780.112
LDDV	000.122	000.003	000.135	002.483	000.004	000.004		000.008	00317.249
LDDT	000.269	000.004	000.392	004.291	000.007	000.006		000.008	00451.014
HDDV	000.455	000.013	004.925	001.651	000.170	000.157		000.028	01491.057
MC	002.659	000.003	000.839	013.635	000.029	000.025		000.053	00399.234

2.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / $acre)^2$ / acre)

3. Emergency Generator

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Davis
Regulatory Area(s): Northern Wasatch Front, UT; Salt Lake City, UT

- Activity Title: New-On Base Generators

- Activity Description:
New-On Base Generators

- Activity Start Date
Start Month: 1
Start Year: 2024

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.045198
SO_x	0.038070
NO_x	0.186300
CO	0.124416
PM 10	0.040662

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.040662
Pb	0.000000
NH_3	0.000000
CO_2e	21.5

3.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 8

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 135
Average Operating Hours Per Year (hours): 30

3.3 Emergency Generator Emission Factor(s)

- Emergency Generators Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251			1.33

3.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

4. Personnel

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Davis
Regulatory Area(s): Northern Wasatch Front, UT; Salt Lake City, UT

- Activity Title: Addtional Personel During Transition

- Activity Description:
800 Addtional Personel During Transition

- Activity Start Date
Start Month: 1
Start Year: 2024

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.599816
SO_x	0.004111
NO_x	0.530206
CO	6.807880
PM 10	0.016560

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.014906
Pb	0.000000
NH_3	0.037780
CO_2e	606.6

4.2 Personnel Assumptions

- Number of Personnel
Active Duty Personnel: 0
Civilian Personnel: 273
Support Contractor Personnel: 0
Air National Guard (ANG) Personnel: 0
Reserve Personnel: 0

- Default Settings Used: Yes

- Average Personnel Round Trip Commute (mile): 20 (default)

- Personnel Work Schedule
Active Duty Personnel: 5 Days Per Week (default)
Civilian Personnel: 5 Days Per Week (default)
Support Contractor Personnel: 5 Days Per Week (default)
Air National Guard (ANG) Personnel: 4 Days Per Week (default)
Reserve Personnel: 4 Days Per Month (default)

4.3 Personnel On Road Vehicle Mixture

- On Road Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	37.55	60.32	0	0.03	0.2	0	1.9
GOVs	54.49	37.73	4.67	0	0	3.11	0

4.4 Personnel Emission Factor(s)

- On Road Vehicle Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.295	000.002	000.223	003.377	000.009	000.008		000.023	00328.308
LDGT	000.367	000.003	000.395	004.664	000.011	000.010		000.024	00423.961
HDGV	000.747	000.005	001.118	016.415	000.026	000.023		000.045	00780.112
LDDV	000.122	000.003	000.135	002.483	000.004	000.004		000.008	00317.249
LDDT	000.269	000.004	000.392	004.291	000.007	000.006		000.008	00451.014
HDDV	000.455	000.013	004.925	001.651	000.170	000.157		000.028	01491.057
MC	002.659	000.003	000.839	013.635	000.029	000.025		000.053	00399.234

4.5 Personnel Formula(s)

- Personnel Vehicle Miles Travel for Work Days per Year

$VMT_P = NP * WD * AC$

VMT_P: Personnel Vehicle Miles Travel (miles/year)
NP: Number of Personnel
WD: Work Days per Year
AC: Average Commute (miles)

- Total Vehicle Miles Travel per Year

$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$

VMT_{Total}: Total Vehicle Miles Travel (miles)
VMT_{AD}: Active Duty Personnel Vehicle Miles Travel (miles)
VMT_C: Civilian Personnel Vehicle Miles Travel (miles)
VMT_{SC}: Support Contractor Personnel Vehicle Miles Travel (miles)
VMT_{ANG}: Air National Guard Personnel Vehicle Miles Travel (miles)
VMT_{AFRC}: Reserve Personnel Vehicle Miles Travel (miles)

- Vehicle Emissions per Year

$V_{POL} = (VMT_{Total} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{Total}: Total Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Personnel On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: HILL AFB
State: Utah
County(s): Davis
Regulatory Area(s): Northern Wasatch Front, UT; Salt Lake City, UT

b. Action Title: GBSD Deployment

c. Project Number/s (if applicable): GBSD Deployment

d. Projected Action Start Date: 1 / 2023

e. Action Description:

GBSD Deployment

f. Point of Contact:

Name: TLL
Title: x
Organization: x
Email: x
Phone Number: x

2. Analysis: Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: _____ applicable
__X__ not applicable

Conformity Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Northern Wasatch Front, UT			
VOC	1.559	100	No
NOx	2.923	100	No
CO	3.426		
SOx	0.008		
PM 10	3.788		
PM 2.5	0.117		
Pb	0.000		
NH3	0.003		
CO2e	799.7		
Salt Lake City, UT			

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

VOC	1.559	70	No
NOx	2.923	70	No
CO	3.426		
SOx	0.008	70	No
PM 10	3.788		
PM 2.5	0.117	70	No
Pb	0.000		
NH3	0.003	70	No
CO2e	799.7		

2024

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Northern Wasatch Front, UT			
VOC	0.645	100	No
NOx	0.717	100	No
CO	6.932		
SOx	0.042		
PM 10	0.057		
PM 2.5	0.056		
Pb	0.000		
NH3	0.038		
CO2e	628.2		
Salt Lake City, UT			
VOC	0.645	70	No
NOx	0.717	70	No
CO	6.932		
SOx	0.042	70	No
PM 10	0.057		
PM 2.5	0.056	70	No
Pb	0.000		
NH3	0.038	70	No
CO2e	628.2		

2025 - (Steady State)

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Northern Wasatch Front, UT			
VOC	0.645	100	No
NOx	0.717	100	No
CO	6.932		
SOx	0.042		
PM 10	0.057		
PM 2.5	0.056		
Pb	0.000		
NH3	0.038		
CO2e	628.2		
Salt Lake City, UT			
VOC	0.645	70	No
NOx	0.717	70	No
CO	6.932		
SOx	0.042	70	No
PM 10	0.057		

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

PM 2.5	0.056	70	No
Pb	0.000		
NH3	0.038	70	No
CO2e	628.2		

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.

_____ _____

TLL, x DATE

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: MALMSTROM AFB
State: Montana
County(s): Cascade
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: GBSD Deployment

c. Project Number/s (if applicable): GBSD Deployment

d. Projected Action Start Date: 1 / 2023

e. Action Description:

GBSD Deployment

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.786	250	No
NOx	4.312	250	No
CO	13.735	250	No
SOx	0.016	250	No
PM 10	6.564	250	No
PM 2.5	0.161	250	No
Pb	0.000	25	No
NH3	0.050	250	No
CO2e	1745.4		

2024

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.967	250	No
NOx	5.619	250	No
CO	15.785	250	No
SOx	0.020	250	No
PM 10	10.214	250	No
PM 2.5	0.212	250	No
Pb	0.000	25	No
NH3	0.052	250	No
CO2e	2135.6		

2025

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.234	250	No
NOx	5.246	250	No
CO	15.735	250	No
SOx	0.020	250	No
PM 10	17.914	250	No
PM 2.5	0.190	250	No
Pb	0.000	25	No
NH3	0.052	250	No
CO2e	2119.8		

2026

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.326	250	No
NOx	3.562	250	No
CO	13.556	250	No
SOx	0.014	250	No
PM 10	0.118	250	No
PM 2.5	0.116	250	No
Pb	0.000	25	No

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

NH3	0.051	250	No
CO2e	1609.8		

2027

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.252	250	No
NOx	3.486	250	No
CO	13.498	250	No
SOx	0.014	250	No
PM 10	0.137	250	No
PM 2.5	0.118	250	No
Pb	0.000	25	No
NH3	0.051	250	No
CO2e	1589.8		

2028

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.720	250	No
NOx	1.654	250	No
CO	10.768	250	No
SOx	0.008	250	No
PM 10	0.079	250	No
PM 2.5	0.056	250	No
Pb	0.000	25	No
NH3	0.049	250	No
CO2e	1029.0		

2029

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.829	250	No
NOx	0.754	250	No
CO	9.376	250	No
SOx	0.005	250	No
PM 10	0.023	250	No
PM 2.5	0.021	250	No
Pb	0.000	25	No
NH3	0.048	250	No
CO2e	742.9		

2030

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.130	250	No
NOx	1.676	250	No
CO	10.852	250	No
SOx	0.009	250	No

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

PM 10	0.260	250	No
PM 2.5	0.055	250	No
Pb	0.000	25	No
NH3	0.049	250	No
CO2e	1083.1		

2031

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.829	250	No
NOx	0.754	250	No
CO	9.376	250	No
SOx	0.005	250	No
PM 10	0.023	250	No
PM 2.5	0.021	250	No
Pb	0.000	25	No
NH3	0.048	250	No
CO2e	742.9		

2032

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.829	250	No
NOx	0.754	250	No
CO	9.376	250	No
SOx	0.005	250	No
PM 10	0.023	250	No
PM 2.5	0.021	250	No
Pb	0.000	25	No
NH3	0.048	250	No
CO2e	742.9		

2033

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.253	250	No
NOx	3.513	250	No
CO	2.555	250	No
SOx	0.477	250	No
PM 10	0.594	250	No
PM 2.5	0.594	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	1726.7		

2034 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.253	250	No

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

NOx	3.513	250	No
CO	2.555	250	No
SOx	0.477	250	No
PM 10	0.594	250	No
PM 2.5	0.594	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	1726.7		

None of estimated annual net emissions associated with this action are above the insignificance indicators, indicating no significant impact to air quality.Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs.No further air assessment is needed.

_____ _____

TLL, x DATE

1. General Information

- Action Location
Base: MALMSTROM AFB
State: Montana
County(s): Cascade
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: GBSD Deployment

- Project Number/s (if applicable): GBSD Deployment

- Projected Action Start Date: 1 / 2023

- Action Purpose and Need:
GBSD Deployment

- Action Description:
GBSD Deployment

- Point of Contact
Name: TLL
Title: x
Organization: x
Email: x
Phone Number: x

- Activity List:

Activity Type		Activity Title
2.	Emergency Generator	New-On Base Generators
3.	Personnel	Addtional Personel During Transition
4.	Heating	Heating of On-Base Facilities
5.	Degreaser	Field Depot - Degreasers
6.	Construction / Demolition	Integrated Comand Center
7.	Construction / Demolition	Vehicle Storage Facility
8.	Construction / Demolition	Missile-Handling Administrative Building
9.	Construction / Demolition	Missile Transfer and TE Storage Facility
10.	Construction / Demolition	Security Trainer
11.	Construction / Demolition	Integrated Training Complex
12.	Construction / Demolition	Consolidated Maintenance Complex
13.	Construction / Demolition	PSRE Storage Facility
14.	Construction / Demolition	Field Depot

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Emergency Generator

2.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Cascade
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: New-On Base Generators

- Activity Description:
New-On Base Generators

- Activity Start Date
Start Month: 1
Start Year: 2033

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.558000
SO_x	0.470000
NO_x	2.300000
CO	1.536000
PM 10	0.502000

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.502000
Pb	0.000000
NH_3	0.000000
CO_2e	266.0

2.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 8

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 500
Average Operating Hours Per Year (hours): 100

2.3 Emergency Generator Emission Factor(s)

- Emergency Generators Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251			1.33

2.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

3. Personnel

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Cascade
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Addtional Personel During Transition

- Activity Description:
800 Addtional Personel During Transition

- Activity Start Date
Start Month: 1
Start Year: 2023

- Activity End Date
Indefinite: No
End Month: 12
End Year: 2032

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	8.293729
SO_x	0.052702
NO_x	7.539351
CO	93.758800
PM 10	0.231568

Pollutant	Total Emissions (TONs)
PM 2.5	0.210746
Pb	0.000000
NH_3	0.477583
CO_2e	7429.3

3.2 Personnel Assumptions

- Number of Personnel
Active Duty Personnel: 0
Civilian Personnel: 350
Support Contractor Personnel: 0
Air National Guard (ANG) Personnel: 0
Reserve Personnel: 0

- Default Settings Used: Yes

- Average Personnel Round Trip Commute (mile): 20 (default)

- Personnel Work Schedule
Active Duty Personnel: 5 Days Per Week (default)
Civilian Personnel: 5 Days Per Week (default)
Support Contractor Personnel: 5 Days Per Week (default)
Air National Guard (ANG) Personnel: 4 Days Per Week (default)
Reserve Personnel: 4 Days Per Month (default)

3.3 Personnel On Road Vehicle Mixture

- On Road Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	37.55	60.32	0	0.03	0.2	0	1.9
GOVs	54.49	37.73	4.67	0	0	3.11	0

3.4 Personnel Emission Factor(s)

- On Road Vehicle Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

3.5 Personnel Formula(s)

- Personnel Vehicle Miles Travel for Work Days per Year

$VMT_P = NP * WD * AC$

VMT_P: Personnel Vehicle Miles Travel (miles/year)
NP: Number of Personnel
WD: Work Days per Year
AC: Average Commute (miles)

- Total Vehicle Miles Travel per Year

$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$

VMT_{Total}: Total Vehicle Miles Travel (miles)
VMT_{AD}: Active Duty Personnel Vehicle Miles Travel (miles)
VMT_C: Civilian Personnel Vehicle Miles Travel (miles)
VMT_{SC}: Support Contractor Personnel Vehicle Miles Travel (miles)
VMT_{ANG}: Air National Guard Personnel Vehicle Miles Travel (miles)
VMT_{AFRC}: Reserve Personnel Vehicle Miles Travel (miles)

- Vehicle Emissions per Year

$V_{POL} = (VMT_{Total} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{Total}: Total Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Personnel On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

4. Heating

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Cascade
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Heating of On-Base Facilities

- Activity Description:
Heating of On-Base Facilities
Integrated Command Center 9,000
Integrated Training Complex 50,000
Consolidated Maintenance Complex 191,651
Missile-Handling Administrative Building 3,000
Missile Transfer and TE Storage Facility 21,000
PSRE Storage Facility 5,000
Vehicle Storage Facility 20,000
Field Depot 5,000
Total 34,600

- Activity Start Date
Start Month: 1
Start Year: 2033

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.066734
SO_x	0.007280
NO_x	1.213343
CO	1.019208
PM 10	0.092214

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.092214
Pb	0.000000
NH_3	0.000000
CO_2e	1460.7

4.2 Heating Assumptions

- Heating
Heating Calculation Type: Heat Energy Requirement Method

- Heat Energy Requirement Method
Area of floorspace to be heated (ft^2): 326251
Type of fuel: Natural Gas
Type of boiler/furnace: Industrial (10 - 250 MMBtu/hr)
Heat Value ($MMBtu/ft^3$): 0.00105
Energy Intensity ($MMBtu/ft^2$): 0.0781

- Default Settings Used: Yes

- Boiler/Furnace Usage

Operating Time Per Year (hours): 900 (default)

4.3 Heating Emission Factor(s)

- Heating Emission Factors (lb/1000000 scf)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
5.5	0.6	100	84	7.6	7.6			120390

4.4 Heating Formula(s)

- Heating Fuel Consumption ft^3 per Year

FC_{HER}= HA * EI / HV / 1000000

FC_{HER}: Fuel Consumption for Heat Energy Requirement Method
HA: Area of floorspace to be heated (ft^2)
EI: Energy Intensity Requirement ($MMBtu/ft^2$)
HV: Heat Value ($MMBTU/ft^3$)
1000000: Conversion Factor

- Heating Emissions per Year

HE_{POL}= FC * EF_{POL} / 2000

HE_{POL}: Heating Emission Emissions (TONs)
FC: Fuel Consumption
EF_{POL}: Emission Factor for Pollutant
2000: Conversion Factor pounds to tons

5. Degreaser

5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Cascade
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Field Depot - Degreasers

- Activity Description:
Field Depot - Degreasers

- Activity Start Date
Start Month: 1
Start Year: 2033

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	1.628250
SO_x	0.000000
NO_x	0.000000
CO	0.000000
PM 10	0.000000

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.000000
Pb	0.000000
NH_3	0.000000
CO_2e	0.0

5.2 Degreaser Assumptions

- Degreaser
Net solvent usage (total less recycle) (gallons/year): 500

- Default Settings Used: Yes

- Degreaser Consumption
Solvent used: Mineral Spirits CAS#64475-85-0 (default)
Specific gravity of solvent: 0.78 (default)
Solvent VOC content (%): 100 (default)
Efficiency of control device (%): 0 (default)

5.3 Degreaser Formula(s)

- Degreaser Emissions per Year
DE_{VOC}= (VOC / 100) * NS * SG * 8.35 * (1 - (CD / 100)) / 2000

DE_{VOC}: Degreaser VOC Emissions (TONs per Year)
VOC: Solvent VOC content (%)
(VOC / 100): Conversion Factor percent to decimal
NS: Net solvent usage (total less recycle) (gallons/year)
SG: Specific gravity of solvent

8.35: Conversion Factor the density of water
CD: Efficiency of control device (%)
(1 - (CD / 100)): Conversion Factor percent to decimal (Not effected by control device)
2000: Conversion Factor pounds to tons

6. Construction / Demolition

6.1 General Information & Timeline Assumptions

- Activity Location
County: Cascade
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Integrated Comand Center

- Activity Description:
On-Base Construction Size (acres) Grading Building Construction Paving Trenching Architectural Coatings Start End
Integrated Command Center 2.3 102,000 51,000 25,500 639 51,000 2023 2025

- Activity Start Date
Start Month: 6
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 10
End Month: 2025

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	1.390784
SO_x	0.013331
NO_x	4.525884
CO	6.093613
PM 10	4.263069

Pollutant	Total Emissions (TONs)
PM 2.5	0.178565
Pb	0.000000
NH_3	0.003848
CO_2e	1282.8

6.1 Site Grading Phase

6.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 4
Number of Days: 0

6.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 102000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings

Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

6.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585

HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

6.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

6.2 Trenching/Excavating Phase

6.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 2
Start Quarter: 1
Start Year: 2025

- Phase Duration
Number of Month: 4
Number of Days: 0

6.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 639
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

6.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

6.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

6.3 Building Construction Phase

6.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 24
Number of Days: 0

6.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 51000
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

6.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0258	0.0006	0.1108	0.2145	0.0034	0.0034	0.0023	54.454
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0320	0.0006	0.2612	0.2683	0.0103	0.0103	0.0028	61.065
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0242	0.0003	0.1487	0.1761	0.0067	0.0067	0.0021	25.657

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

6.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

6.4 Architectural Coatings Phase

6.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 2
Start Quarter: 1
Start Year: 2025

- Phase Duration
Number of Month: 4
Number of Days: 0

6.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 51000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

6.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

6.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

6.5 Paving Phase

6.5.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 7
Start Quarter: 1
Start Year: 2025

- Phase Duration
Number of Month: 4
Number of Days: 0

6.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 25500

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	1	8
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

6.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**

Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

6.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)

WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

7. Construction / Demolition

7.1 General Information & Timeline Assumptions

- Activity Location
County: Cascade
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Vehicle Storage Facility

- Activity Description:
On-Base Construction Size (acres) Grading Building Construction Paving Trenching Architectural Coatings Start End
Vehicle Storage Facility 1.0 44,000 22,000 11,000 420 22,000 2023 2024

- Activity Start Date
Start Month: 6
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 12
End Month: 2024

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.732977
SO_x	0.007985
NO_x	2.705632
CO	3.563066
PM 10	1.870576

Pollutant	Total Emissions (TONs)
PM 2.5	0.107046
Pb	0.000000
NH_3	0.002135
CO_2e	769.5

7.1 Site Grading Phase

7.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 4
Number of Days: 0

7.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 44000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings

Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

7.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585

HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

7.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

7.2 Trenching/Excavating Phase

7.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 4
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 3
Number of Days: 0

7.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 420
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

7.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

7.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

7.3 Building Construction Phase

7.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 12
Number of Days: 0

7.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 22000
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

7.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0258	0.0006	0.1108	0.2145	0.0034	0.0034	0.0023	54.454
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0320	0.0006	0.2612	0.2683	0.0103	0.0103	0.0028	61.065
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0242	0.0003	0.1487	0.1761	0.0067	0.0067	0.0021	25.657

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

7.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

7.4 Architectural Coatings Phase

7.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 7
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 3
Number of Days: 0

7.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 22000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

7.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

7.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

7.5 Paving Phase

7.5.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 3
Number of Days: 0

7.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 11000

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

7.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

7.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)

WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

8. Construction / Demolition

8.1 General Information & Timeline Assumptions

- Activity Location
County: Cascade
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Missile-Handling Administrative Building

- Activity Description:
Size (acres) Grading Building Construction Paving Trenching Architectural Coatings Start End
Missile-Handling Administrative Building 0.2 8,800 4,400 2,200 188 4,400 2023 2023

- Activity Start Date
Start Month: 6
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 11
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.157035
SO_x	0.001860
NO_x	0.572229
CO	0.786077
PM 10	0.111898

Pollutant	Total Emissions (TONs)
PM 2.5	0.022454
Pb	0.000000
NH_3	0.000454
CO_2e	179.5

8.1 Site Grading Phase

8.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

8.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 8800
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

8.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.4

									96
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

8.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

8.2 Trenching/Excavating Phase

8.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

8.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 188
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

8.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

8.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

8.3 Building Construction Phase

8.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 7
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 4
Number of Days: 0

8.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 4400
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	4
Forklifts Composite	2	6
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

8.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0258	0.0006	0.1108	0.2145	0.0034	0.0034	0.0023	54.454
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516

LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

8.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase

$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

8.4 Architectural Coatings Phase

8.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

8.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 4400
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

8.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875

LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

8.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase
$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

8.5 Paving Phase

8.5.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 11
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

8.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 2200

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

8.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723

LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

8.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

9. Construction / Demolition

9.1 General Information & Timeline Assumptions

- Activity Location
County: Cascade
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Missile Transfer and TE Storage Facility

- Activity Description:
Size (acres) Grading Building Construction Paving Trenching Architectural Coatings Start End
Missile Transfer and TE Storage Facility 1.1 50,000 25,000 12,500 447 25,000 2023 2023

- Activity Start Date
Start Month: 6
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 11
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.467642
SO_x	0.002940
NO_x	1.019173
CO	1.319039
PM 10	0.542297

Pollutant	Total Emissions (TONs)
PM 2.5	0.040343
Pb	0.000000
NH_3	0.000918
CO_2e	283.5

9.1 Site Grading Phase

9.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

9.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 50000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

9.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.4

									96
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

9.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

9.2 Trenching/Excavating Phase

9.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

9.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 447
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

9.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

9.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

9.3 Building Construction Phase

9.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 7
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 5
Number of Days: 0

9.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 25000
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

9.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0258	0.0006	0.1108	0.2145	0.0034	0.0034	0.0023	54.454
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0320	0.0006	0.2612	0.2683	0.0103	0.0103	0.0028	61.065
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0242	0.0003	0.1487	0.1761	0.0067	0.0067	0.0021	25.657

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e

LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

9.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

9.4 Architectural Coatings Phase

9.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

9.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 25000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC

POVs	50.00	50.00	0	0	0	0	0

9.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

9.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

9.5 Paving Phase

9.5.1 Paving Phase Timeline Assumptions

- Phase Start Date

Start Month: 11
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

9.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 12500

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

9.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

9.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)

1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

10. Construction / Demolition

10.1 General Information & Timeline Assumptions

- Activity Location
County: Cascade
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Security Trainer

- Activity Description:
Size (acres) Grading Building Construction Paving Trenching Architectural Coatings Start End
Security Trainer 1.0 43,560 2,000 43,560 417 2,000 2024 2024

- Activity Start Date
Start Month: 2
Start Month: 2024

- Activity End Date
Indefinite: False
End Month: 6
End Month: 2024

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.109940
SO_x	0.001458
NO_x	0.464741
CO	0.642960
PM 10	0.456458

Pollutant	Total Emissions (TONs)
PM 2.5	0.018946
Pb	0.000000
NH_3	0.000364
CO_2e	140.9

10.1 Site Grading Phase

10.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 1
Number of Days: 0

10.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 43560
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

10.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
Other Construction Equipment Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
Rubber Tired Dozers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.4

									96
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

10.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

10.2 Trenching/Excavating Phase

10.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 3
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 1
Number of Days: 0

10.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 417
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

10.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

10.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

10.3 Building Construction Phase

10.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 2
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 1
Number of Days: 0

10.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 2000
Height of Building (ft): 20
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	4
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

10.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0715	0.0013	0.4600	0.3758	0.0161	0.0161	0.0064	128.78
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0246	0.0006	0.0973	0.2146	0.0029	0.0029	0.0022	54.451
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0303	0.0006	0.2464	0.2674	0.0091	0.0091	0.0027	61.061
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0227	0.0003	0.1427	0.1752	0.0059	0.0059	0.0020	25.653

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e

LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

10.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

10.4 Architectural Coatings Phase

10.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 5
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 1
Number of Days: 0

10.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 2000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC

POVs	50.00	50.00	0	0	0	0	0

10.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

10.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

10.5 Paving Phase

10.5.1 Paving Phase Timeline Assumptions

- Phase Start Date

Start Month: 6
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 1
Number of Days: 0

10.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 43560

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	1	8
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

10.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

10.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)

WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

11. Construction / Demolition

11.1 General Information & Timeline Assumptions

- Activity Location
County: Cascade
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Integrated Training Complex

- Activity Description:
Size (acres) Grading Building Construction Paving Trenching Architectural Coatings Start End
Integrated Training Complex 3.7 160,000 80,000 40,000 800 80,000 2024 2027

- Activity Start Date
Start Month: 6
Start Month: 2024

- Activity End Date
Indefinite: False
End Month: 9
End Month: 2027

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	1.835967
SO_x	0.016118
NO_x	5.073272
CO	7.259093
PM 10	9.748552

Pollutant	Total Emissions (TONs)
PM 2.5	0.182166
Pb	0.000000
NH_3	0.004668
CO_2e	1556.3

11.1 Site Grading Phase

11.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 6
Number of Days: 0

11.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 160000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings
Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Tractors/Loaders/Backhoes Composite	2	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

11.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496

MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

11.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

11.2 Trenching/Excavating Phase

11.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 3
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 2
Number of Days: 0

11.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 800
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

11.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

11.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

11.3 Building Construction Phase

11.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 2
Start Quarter: 1
Start Year: 2025

- Phase Duration
Number of Month: 30
Number of Days: 0

11.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 80000
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips
Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

11.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0680	0.0013	0.4222	0.3737	0.0143	0.0143	0.0061	128.77
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0236	0.0006	0.0859	0.2147	0.0025	0.0025	0.0021	54.449
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0287	0.0006	0.2329	0.2666	0.0080	0.0080	0.0025	61.057
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0214	0.0003	0.1373	0.1745	0.0051	0.0051	0.0019	25.650

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.8

									75
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

11.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

11.4 Architectural Coatings Phase

11.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 5
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 3
Number of Days: 0

11.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 80000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

11.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

11.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

11.5 Paving Phase

11.5.1 Paving Phase Timeline Assumptions

- Phase Start Date

Start Month: 7

Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 3
Number of Days: 0

11.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 40000

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	1	8
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

11.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

11.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)

1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

12. Construction / Demolition

12.1 General Information & Timeline Assumptions

- Activity Location
County: Cascade
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Consolidated Maintenance Complex

- Activity Description:
Size (acres) Grading Building Construction Paving Trenching Architectural Coatings Start End
Consolidated Maintenance Complex 6.8 296,484 148,242 74,121 1,089 148,242 2025 2028

- Activity Start Date
Start Month: 5
Start Month: 2025

- Activity End Date
Indefinite: False
End Month: 5
End Month: 2028

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	2.614980
SO_x	0.016109
NO_x	4.994882
CO	7.158388
PM 10	17.895251

Pollutant	Total Emissions (TONs)
PM 2.5	0.176484
Pb	0.000000
NH_3	0.005031
CO_2e	1559.1

12.1 Site Grading Phase

12.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 5
Start Quarter: 1
Start Year: 2025

- Phase Duration
Number of Month: 6
Number of Days: 0

12.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 296484
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings
Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Tractors/Loaders/Backhoes Composite	2	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

12.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496

MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

12.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

12.2 Trenching/Excavating Phase

12.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 2
Number of Days: 0

12.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 1089
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

12.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

12.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

12.3 Building Construction Phase

12.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 11
Start Quarter: 1
Start Year: 2025

- Phase Duration
Number of Month: 30
Number of Days: 0

12.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 148242
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips
Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

12.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0680	0.0013	0.4222	0.3737	0.0143	0.0143	0.0061	128.77
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0236	0.0006	0.0859	0.2147	0.0025	0.0025	0.0021	54.449
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0287	0.0006	0.2329	0.2666	0.0080	0.0080	0.0025	61.057
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0214	0.0003	0.1373	0.1745	0.0051	0.0051	0.0019	25.650

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.8

									75
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

12.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

12.4 Architectural Coatings Phase

12.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 1
Number of Days: 0

12.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 148242
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

12.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

12.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

12.5 Paving Phase

12.5.1 Paving Phase Timeline Assumptions

- Phase Start Date

Start Month: 4

Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 2
Number of Days: 0

12.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 74121

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	2	6
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

12.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

12.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)

1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

13. Construction / Demolition

13.1 General Information & Timeline Assumptions

- Activity Location
County: Cascade
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: PSRE Storage Facility

- Activity Description:
Size (acres) Grading Building Construction Paving Trenching Architectural Coatings Start End
PSRE Storage Facility 0.2 10,000 5,000 2,500 200 5,000 2030 2032

- Activity Start Date
Start Month: 5
Start Month: 2030

- Activity End Date
Indefinite: False
End Month: 10
End Month: 2030

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.145467
SO_x	0.001661
NO_x	0.437932
CO	0.695451
PM 10	0.117539

Pollutant	Total Emissions (TONs)
PM 2.5	0.016039
Pb	0.000000
NH_3	0.000403
CO_2e	160.4

13.1 Site Grading Phase

13.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 5
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 1
Number of Days: 0

13.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 10000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings
Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

13.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496

MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

13.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

13.2 Trenching/Excavating Phase

13.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 9
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 1
Number of Days: 0

13.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 200
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

13.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

13.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

13.3 Building Construction Phase

13.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 3
Number of Days: 0

13.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 5000
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	4
Forklifts Composite	2	6
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips
Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

13.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0680	0.0013	0.4222	0.3737	0.0143	0.0143	0.0061	128.77
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0236	0.0006	0.0859	0.2147	0.0025	0.0025	0.0021	54.449
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.5

									85
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

13.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase

VMT_{VT} = BA * BH * (0.38 / 1000) * HT

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

13.4 Architectural Coatings Phase

13.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 9
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 1
Number of Days: 0

13.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 5000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

13.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.2

									84
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

13.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase
$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

13.5 Paving Phase

13.5.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 1
Number of Days: 0

13.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 2500

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

13.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.5

									16
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

13.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

14. Construction / Demolition

14.1 General Information & Timeline Assumptions

- Activity Location
County: Cascade
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Field Depot

- Activity Description:
Size (acres) Grading Building Construction Paving Trenching Architectural Coatings Start End
Field Depot 0.2 10,000 5,000 2,500 200 5,000 2030 2032

- Activity Start Date
Start Month: 5
Start Month: 2030

- Activity End Date
Indefinite: False
End Month: 10
End Month: 2030

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.155364
SO_x	0.001862
NO_x	0.484464
CO	0.781096
PM 10	0.119017

Pollutant	Total Emissions (TONs)
PM 2.5	0.017514
Pb	0.000000
NH_3	0.000459
CO_2e	179.7

14.1 Site Grading Phase

14.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 5
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 1
Number of Days: 0

14.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 10000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings
Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

14.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496

MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

14.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

14.2 Trenching/Excavating Phase

14.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 9
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 1
Number of Days: 0

14.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 200
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

14.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

14.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

14.3 Building Construction Phase

14.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 4
Number of Days: 0

14.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 5000
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	4
Forklifts Composite	2	6
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips
Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

14.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0680	0.0013	0.4222	0.3737	0.0143	0.0143	0.0061	128.77
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0236	0.0006	0.0859	0.2147	0.0025	0.0025	0.0021	54.449
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.5

									85
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

14.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase

VMT_{VT} = BA * BH * (0.38 / 1000) * HT

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

14.4 Architectural Coatings Phase

14.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 9
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 1
Number of Days: 0

14.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 5000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

14.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.2

									84
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.516
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

14.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase
$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

14.5 Paving Phase

14.5.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 1
Number of Days: 0

14.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 5000

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

14.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.343	000.002	000.257	003.756	000.010	000.009		000.022	00313.875
LDGT	000.400	000.003	000.434	004.961	000.012	000.011		000.024	00404.284
HDGV	000.657	000.005	001.065	014.900	000.026	000.023		000.044	00740.723
LDDV	000.141	000.003	000.139	002.353	000.004	000.004		000.008	00301.5

									16
LDDT	000.270	000.004	000.389	003.971	000.007	000.006		000.008	00428.585
HDDV	000.614	000.013	005.915	001.983	000.169	000.155		000.030	01487.496
MC	002.246	000.003	000.875	013.744	000.028	000.025		000.055	00398.991

14.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: MINOT AFB
State: North Dakota
County(s): Ward
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: GBSD Deployment

c. Project Number/s (if applicable): GBSD Deployment

d. Projected Action Start Date: 1 / 2023

e. Action Description:

GBSD Deployment

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Analysis Summary:

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

2023

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.843	250	No
NOx	4.291	250	No
CO	14.051	250	No
SOx	0.016	250	No
PM 10	6.570	250	No
PM 2.5	0.165	250	No
Pb	0.000	25	No
NH3	0.050	250	No
CO2e	1748.1		

2024

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.025	250	No
NOx	5.597	250	No
CO	16.110	250	No
SOx	0.020	250	No
PM 10	10.220	250	No
PM 2.5	0.216	250	No
Pb	0.000	25	No
NH3	0.052	250	No
CO2e	2138.3		

2025

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.292	250	No
NOx	5.223	250	No
CO	16.059	250	No
SOx	0.020	250	No
PM 10	17.919	250	No
PM 2.5	0.194	250	No
Pb	0.000	25	No
NH3	0.052	250	No
CO2e	2122.5		

2026

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.383	250	No
NOx	3.536	250	No
CO	13.874	250	No
SOx	0.014	250	No
PM 10	0.124	250	No
PM 2.5	0.120	250	No
Pb	0.000	25	No

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

NH3	0.051	250	No
CO2e	1612.3		

2027

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.309	250	No
NOx	3.462	250	No
CO	13.815	250	No
SOx	0.014	250	No
PM 10	0.142	250	No
PM 2.5	0.122	250	No
Pb	0.000	25	No
NH3	0.051	250	No
CO2e	1592.4		

2028

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.775	250	No
NOx	1.635	250	No
CO	11.075	250	No
SOx	0.008	250	No
PM 10	0.085	250	No
PM 2.5	0.060	250	No
Pb	0.000	25	No
NH3	0.049	250	No
CO2e	1031.6		

2029

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.884	250	No
NOx	0.737	250	No
CO	9.678	250	No
SOx	0.005	250	No
PM 10	0.028	250	No
PM 2.5	0.025	250	No
Pb	0.000	25	No
NH3	0.048	250	No
CO2e	745.6		

2030

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.186	250	No
NOx	1.658	250	No
CO	11.160	250	No
SOx	0.009	250	No

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

PM 10	0.265	250	No
PM 2.5	0.059	250	No
Pb	0.000	25	No
NH3	0.049	250	No
CO2e	1085.8		

2031

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.426	250	No
NOx	2.209	250	No
CO	11.897	250	No
SOx	0.010	250	No
PM 10	0.572	250	No
PM 2.5	0.077	250	No
Pb	0.000	25	No
NH3	0.049	250	No
CO2e	1209.7		

2032

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.884	250	No
NOx	0.737	250	No
CO	9.678	250	No
SOx	0.005	250	No
PM 10	0.028	250	No
PM 2.5	0.025	250	No
Pb	0.000	25	No
NH3	0.048	250	No
CO2e	745.6		

2033

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.368	250	No
NOx	4.618	250	No
CO	3.433	250	No
SOx	0.541	250	No
PM 10	0.719	250	No
PM 2.5	0.719	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	2743.4		

2034 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.368	250	No

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

NOx	4.618	250	No
CO	3.433	250	No
SOx	0.541	250	No
PM 10	0.719	250	No
PM 2.5	0.719	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	2743.4		

None of estimated annual net emissions associated with this action are above the insignificance indicators, indicating no significant impact to air quality.Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs.No further air assessment is needed.

_____ _____

TLL, x DATE

1. General Information

- Action Location
Base: MINOT AFB
State: North Dakota
County(s): Ward
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: GBSD Deployment

- Project Number/s (if applicable): GBSD Deployment

- Projected Action Start Date: 1 / 2023

- Action Purpose and Need:
GBSD Deployment

- Action Description:
GBSD Deployment

- Point of Contact
Name: TLL
Title: x
Organization: x
Email: x
Phone Number: x

- Activity List:

Activity Type		Activity Title
2.	Emergency Generator	New-On Base Generators
3.	Personnel	Addtional Personel During Transition
4.	Heating	Heating of On-Base Facilities
5.	Degreaser	Field Depot - Degreasers
6.	Construction / Demolition	Integrated Comand Center
7.	Construction / Demolition	Vehicle Storage Facility
8.	Construction / Demolition	Missile-Handling Administrative Building
9.	Construction / Demolition	Missile Transfer and TE Storage Facility
10.	Construction / Demolition	Security Trainer
11.	Construction / Demolition	Integrated Training Complex
12.	Construction / Demolition	Consolidated Maintenance Complex
13.	Construction / Demolition	PSRE Storage Facility
14.	Construction / Demolition	Field Depot
15.	Construction / Demolition	RS/RV Maintenance Facility

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Emergency Generator

2.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Ward
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: New-On Base Generators

- Activity Description:
New-On Base Generators

- Activity Start Date
Start Month: 1
Start Year: 2033

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.627750
SO_x	0.528750
NO_x	2.587500
CO	1.728000
PM 10	0.564750

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.564750
Pb	0.000000
NH_3	0.000000
CO_2e	299.3

2.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 9

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 500
Average Operating Hours Per Year (hours): 100

2.3 Emergency Generator Emission Factor(s)

- Emergency Generators Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251			1.33

2.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

3. Personnel

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Ward
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Addtional Personel During Transition

- Activity Description:
350 Addtional Personel During Transition

- Activity Start Date
Start Month: 1
Start Year: 2023

- Activity End Date
Indefinite: No
End Month: 12
End Year: 2032

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	8.838351
SO_x	0.052702
NO_x	7.367046
CO	96.779534
PM 10	0.283329

Pollutant	Total Emissions (TONs)
PM 2.5	0.250403
Pb	0.000000
NH_3	0.477583
CO_2e	7456.3

3.2 Personnel Assumptions

- Number of Personnel
Active Duty Personnel: 0
Civilian Personnel: 350
Support Contractor Personnel: 0
Air National Guard (ANG) Personnel: 0
Reserve Personnel: 0

- Default Settings Used: Yes

- Average Personnel Round Trip Commute (mile): 20 (default)

- Personnel Work Schedule
Active Duty Personnel: 5 Days Per Week (default)
Civilian Personnel: 5 Days Per Week (default)
Support Contractor Personnel: 5 Days Per Week (default)
Air National Guard (ANG) Personnel: 4 Days Per Week (default)
Reserve Personnel: 4 Days Per Month (default)

3.3 Personnel On Road Vehicle Mixture

- On Road Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	37.55	60.32	0	0.03	0.2	0	1.9
GOVs	54.49	37.73	4.67	0	0	3.11	0

3.4 Personnel Emission Factor(s)

- On Road Vehicle Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

3.5 Personnel Formula(s)

- Personnel Vehicle Miles Travel for Work Days per Year

$VMT_P = NP * WD * AC$

VMT_P: Personnel Vehicle Miles Travel (miles/year)
NP: Number of Personnel
WD: Work Days per Year
AC: Average Commute (miles)

- Total Vehicle Miles Travel per Year

$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$

VMT_{Total}: Total Vehicle Miles Travel (miles)
VMT_{AD}: Active Duty Personnel Vehicle Miles Travel (miles)
VMT_C: Civilian Personnel Vehicle Miles Travel (miles)
VMT_{SC}: Support Contractor Personnel Vehicle Miles Travel (miles)
VMT_{ANG}: Air National Guard Personnel Vehicle Miles Travel (miles)
VMT_{AFRC}: Reserve Personnel Vehicle Miles Travel (miles)

- Vehicle Emissions per Year

$V_{POL} = (VMT_{Total} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{Total}: Total Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Personnel On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

4. Heating

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Ward
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Heating of On-Base Facilities

- Activity Description:
Heating of On-Base Facilities
Integrated Command Center 9,000
Integrated Training Complex 50,000
Consolidated Maintenance Complex 191,651
Missile-Handling Administrative Building 3,000
Missile Transfer and TE Storage Facility 21,000
PSRE Storage Facility 5,000
Vehicle Storage Facility 20,000
Field Depot 5,000
Operations Group Facility 34,600
Total 34,600

- Activity Start Date
Start Month: 1
Start Year: 2033

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.111662
SO_x	0.012181
NO_x	2.030226
CO	1.705389
PM 10	0.154297

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.154297
Pb	0.000000
NH_3	0.000000
CO_2e	2444.2

4.2 Heating Assumptions

- Heating
Heating Calculation Type: Heat Energy Requirement Method

- Heat Energy Requirement Method
Area of floorspace to be heated (ft^2): 383751
Type of fuel: Natural Gas
Type of boiler/furnace: Industrial (10 - 250 MMBtu/hr)
Heat Value ($MMBtu/ft^3$): 0.00105

Energy Intensity (MMBtu/ft^2): 0.1111

- Default Settings Used: Yes

- Boiler/Furnace Usage

Operating Time Per Year (hours): 900 (default)

4.3 Heating Emission Factor(s)

- Heating Emission Factors (lb/1000000 scf)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
5.5	0.6	100	84	7.6	7.6			120390

4.4 Heating Formula(s)

- Heating Fuel Consumption ft^3 per Year

FC_{HER}= HA * EI / HV / 1000000

FC_{HER}: Fuel Consumption for Heat Energy Requirement Method
HA: Area of floorspace to be heated (ft^2)
EI: Energy Intensity Requirement (MMBtu/ft^2)
HV: Heat Value (MMBTU/ft^3)
1000000: Conversion Factor

- Heating Emissions per Year

HE_{POL}= FC * EF_{POL} / 2000

HE_{POL}: Heating Emission Emissions (TONs)
FC: Fuel Consumption
EF_{POL}: Emission Factor for Pollutant
2000: Conversion Factor pounds to tons

5. Degreaser

5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Ward
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Field Depot - Degreasers

- Activity Description:
Field Depot - Degreasers

- Activity Start Date
Start Month: 1
Start Year: 2033

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	1.628250
SO_x	0.000000
NO_x	0.000000
CO	0.000000
PM 10	0.000000

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.000000
Pb	0.000000
NH_3	0.000000
CO_2e	0.0

5.2 Degreaser Assumptions

- Degreaser
Net solvent usage (total less recycle) (gallons/year): 500

- Default Settings Used: Yes

- Degreaser Consumption
Solvent used: Mineral Spirits CAS#64475-85-0 (default)
Specific gravity of solvent: 0.78 (default)
Solvent VOC content (%): 100 (default)
Efficiency of control device (%): 0 (default)

5.3 Degreaser Formula(s)

- Degreaser Emissions per Year
DE_{VOC}= (VOC / 100) * NS * SG * 8.35 * (1 - (CD / 100)) / 2000

DE_{VOC}: Degreaser VOC Emissions (TONs per Year)
VOC: Solvent VOC content (%)
(VOC / 100): Conversion Factor percent to decimal
NS: Net solvent usage (total less recycle) (gallons/year)
SG: Specific gravity of solvent

8.35: Conversion Factor the density of water
CD: Efficiency of control device (%)
(1 - (CD / 100)): Conversion Factor percent to decimal (Not effected by control device)
2000: Conversion Factor pounds to tons

6. Construction / Demolition

6.1 General Information & Timeline Assumptions

- Activity Location
County: Ward
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Integrated Comand Center

- Activity Description:
On-Base Construction Size (acres) Grading Building Construction Paving Trenching Architectural Coatings Start End
Integrated Command Center 2.3 102,000 51,000 25,500 639 51,000 2023 2025

- Activity Start Date
Start Month: 6
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 10
End Month: 2025

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	1.394807
SO_x	0.013331
NO_x	4.520514
CO	6.115863
PM 10	4.263418

Pollutant	Total Emissions (TONs)
PM 2.5	0.178848
Pb	0.000000
NH_3	0.003837
CO_2e	1282.9

6.1 Site Grading Phase

6.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 4
Number of Days: 0

6.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 102000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings

Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

6.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704

HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

6.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

6.2 Trenching/Excavating Phase

6.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 2
Start Quarter: 1
Start Year: 2025

- Phase Duration
Number of Month: 4
Number of Days: 0

6.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 639
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

6.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

6.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

6.3 Building Construction Phase

6.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 24
Number of Days: 0

6.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 51000
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

6.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0258	0.0006	0.1108	0.2145	0.0034	0.0034	0.0023	54.454
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0320	0.0006	0.2612	0.2683	0.0103	0.0103	0.0028	61.065
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0242	0.0003	0.1487	0.1761	0.0067	0.0067	0.0021	25.657

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

6.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

6.4 Architectural Coatings Phase

6.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 2
Start Quarter: 1
Start Year: 2025

- Phase Duration
Number of Month: 4
Number of Days: 0

6.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 51000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

6.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

6.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

6.5 Paving Phase

6.5.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 7
Start Quarter: 1
Start Year: 2025

- Phase Duration
Number of Month: 4
Number of Days: 0

6.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 25500

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	1	8
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

6.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**

Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

6.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)

WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

7. Construction / Demolition

7.1 General Information & Timeline Assumptions

- Activity Location
County: Ward
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Vehicle Storage Facility

- Activity Description:
On-Base Construction Size (acres) Grading Building Construction Paving Trenching Architectural Coatings Start End
Vehicle Storage Facility 1.0 44,000 22,000 11,000 420 22,000 2023 2024

- Activity Start Date
Start Month: 6
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 12
End Month: 2024

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.735322
SO_x	0.007985
NO_x	2.703161
CO	3.575834
PM 10	1.870778

Pollutant	Total Emissions (TONs)
PM 2.5	0.107210
Pb	0.000000
NH_3	0.002130
CO_2e	769.5

7.1 Site Grading Phase

7.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 4
Number of Days: 0

7.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 44000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings

Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

7.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704

HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

7.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

7.2 Trenching/Excavating Phase

7.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 4
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 3
Number of Days: 0

7.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 420
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

7.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

7.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

7.3 Building Construction Phase

7.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 12
Number of Days: 0

7.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 22000
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

7.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0258	0.0006	0.1108	0.2145	0.0034	0.0034	0.0023	54.454
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0320	0.0006	0.2612	0.2683	0.0103	0.0103	0.0028	61.065
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0242	0.0003	0.1487	0.1761	0.0067	0.0067	0.0021	25.657

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

7.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

7.4 Architectural Coatings Phase

7.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 7
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 3
Number of Days: 0

7.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 22000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

7.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

7.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

7.5 Paving Phase

7.5.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 3
Number of Days: 0

7.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 11000

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

7.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

7.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)

WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

8. Construction / Demolition

8.1 General Information & Timeline Assumptions

- Activity Location
County: Ward
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Missile-Handling Administrative Building

- Activity Description:
Size (acres) Grading Building Construction Paving Trenching Architectural Coatings Start End
Missile-Handling Administrative Building 0.2 8,800 4,400 2,200 188 4,400 2023 2023

- Activity Start Date
Start Month: 6
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 11
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.157539
SO_x	0.001860
NO_x	0.571726
CO	0.788814
PM 10	0.111941

Pollutant	Total Emissions (TONs)
PM 2.5	0.022489
Pb	0.000000
NH_3	0.000453
CO_2e	179.5

8.1 Site Grading Phase

8.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

8.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 8800
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

8.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.6

									92
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

8.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

8.2 Trenching/Excavating Phase

8.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

8.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 188
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

8.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

8.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

8.3 Building Construction Phase

8.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 7
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 4
Number of Days: 0

8.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 4400
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	4
Forklifts Composite	2	6
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

8.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0258	0.0006	0.1108	0.2145	0.0034	0.0034	0.0023	54.454
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750

LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

8.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
VMT_{VT} = BA * BH * (0.38 / 1000) * HT

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

8.4 Architectural Coatings Phase

8.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

8.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 4400
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

8.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355

LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

8.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase
$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

8.5 Paving Phase

8.5.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 11
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

8.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 2200

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

8.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043

LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

8.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

9. Construction / Demolition

9.1 General Information & Timeline Assumptions

- Activity Location
County: Ward
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Missile Transfer and TE Storage Facility

- Activity Description:
Size (acres) Grading Building Construction Paving Trenching Architectural Coatings Start End
Missile Transfer and TE Storage Facility 1.1 50,000 25,000 12,500 447 25,000 2023 2023

- Activity Start Date
Start Month: 6
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 11
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.468372
SO_x	0.002940
NO_x	1.016856
CO	1.323485
PM 10	0.542362

Pollutant	Total Emissions (TONs)
PM 2.5	0.040398
Pb	0.000000
NH_3	0.000913
CO_2e	283.5

9.1 Site Grading Phase

9.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

9.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 50000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

9.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.6

									92
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

9.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

9.2 Trenching/Excavating Phase

9.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

9.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 447
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

9.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

9.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

9.3 Building Construction Phase

9.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 7
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 5
Number of Days: 0

9.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 25000
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

9.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0258	0.0006	0.1108	0.2145	0.0034	0.0034	0.0023	54.454
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0320	0.0006	0.2612	0.2683	0.0103	0.0103	0.0028	61.065
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0242	0.0003	0.1487	0.1761	0.0067	0.0067	0.0021	25.657

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e

LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

9.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

9.4 Architectural Coatings Phase

9.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

9.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 25000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC

POVs	50.00	50.00	0	0	0	0	0

9.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

9.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

9.5 Paving Phase

9.5.1 Paving Phase Timeline Assumptions

- Phase Start Date

Start Month: 11
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 1
Number of Days: 0

9.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 12500

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

9.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

9.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)

1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

10. Construction / Demolition

10.1 General Information & Timeline Assumptions

- Activity Location
County: Ward
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Security Trainer

- Activity Description:
Size (acres) Grading Building Construction Paving Trenching Architectural Coatings Start End
Security Trainer 1.0 43,560 2,000 43,560 417 2,000 2024 2024

- Activity Start Date
Start Month: 2
Start Month: 2024

- Activity End Date
Indefinite: False
End Month: 6
End Month: 2024

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.110313
SO_x	0.001458
NO_x	0.464194
CO	0.645033
PM 10	0.456491

Pollutant	Total Emissions (TONs)
PM 2.5	0.018973
Pb	0.000000
NH_3	0.000363
CO_2e	140.9

10.1 Site Grading Phase

10.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 1
Number of Days: 0

10.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 43560
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

10.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
Other Construction Equipment Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
Rubber Tired Dozers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.6

									92
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

10.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

10.2 Trenching/Excavating Phase

10.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 3
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 1
Number of Days: 0

10.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 417
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

10.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

10.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

10.3 Building Construction Phase

10.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 2
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 1
Number of Days: 0

10.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 2000
Height of Building (ft): 20
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	4
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

10.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0715	0.0013	0.4600	0.3758	0.0161	0.0161	0.0064	128.78
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0246	0.0006	0.0973	0.2146	0.0029	0.0029	0.0022	54.451
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0303	0.0006	0.2464	0.2674	0.0091	0.0091	0.0027	61.061
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0227	0.0003	0.1427	0.1752	0.0059	0.0059	0.0020	25.653

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e

LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

10.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

10.4 Architectural Coatings Phase

10.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 5
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 1
Number of Days: 0

10.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 2000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC

POVs	50.00	50.00	0	0	0	0	0

10.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

10.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

10.5 Paving Phase

10.5.1 Paving Phase Timeline Assumptions

- Phase Start Date

Start Month: 6
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 1
Number of Days: 0

10.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 43560

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	1	8
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

10.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

10.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)

WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

11. Construction / Demolition

11.1 General Information & Timeline Assumptions

- Activity Location
County: Ward
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Integrated Training Complex

- Activity Description:
Size (acres) Grading Building Construction Paving Trenching Architectural Coatings Start End
Integrated Training Complex 3.7 160,000 80,000 40,000 800 80,000 2024 2027

- Activity Start Date
Start Month: 6
Start Month: 2024

- Activity End Date
Indefinite: False
End Month: 9
End Month: 2027

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	1.840524
SO_x	0.016118
NO_x	5.065294
CO	7.284869
PM 10	9.748951

Pollutant	Total Emissions (TONs)
PM 2.5	0.182492
Pb	0.000000
NH_3	0.004651
CO_2e	1556.3

11.1 Site Grading Phase

11.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 6
Number of Days: 0

11.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 160000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings
Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Tractors/Loaders/Backhoes Composite	2	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

11.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692

MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

11.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

11.2 Trenching/Excavating Phase

11.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 3
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 2
Number of Days: 0

11.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 800
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

11.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

11.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

11.3 Building Construction Phase

11.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 2
Start Quarter: 1
Start Year: 2025

- Phase Duration
Number of Month: 30
Number of Days: 0

11.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 80000
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips
Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

11.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0680	0.0013	0.4222	0.3737	0.0143	0.0143	0.0061	128.77
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0236	0.0006	0.0859	0.2147	0.0025	0.0025	0.0021	54.449
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0287	0.0006	0.2329	0.2666	0.0080	0.0080	0.0025	61.057
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0214	0.0003	0.1373	0.1745	0.0051	0.0051	0.0019	25.650

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.3

									55
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

11.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

11.4 Architectural Coatings Phase

11.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 5
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 3
Number of Days: 0

11.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 80000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

11.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

11.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

11.5 Paving Phase

11.5.1 Paving Phase Timeline Assumptions

- Phase Start Date

Start Month: 7

Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 3
Number of Days: 0

11.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 40000

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	1	8
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

11.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0714	0.0014	0.3708	0.5706	0.0167	0.0167	0.0064	132.90
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0461	0.0012	0.2243	0.3477	0.0079	0.0079	0.0041	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1747	0.0024	1.1695	0.6834	0.0454	0.0454	0.0157	239.47
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0348	0.0007	0.1980	0.3589	0.0068	0.0068	0.0031	66.875

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

11.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)

1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

12. Construction / Demolition

12.1 General Information & Timeline Assumptions

- Activity Location
County: Ward
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Consolidated Maintenance Complex

- Activity Description:
Size (acres) Grading Building Construction Paving Trenching Architectural Coatings Start End
Consolidated Maintenance Complex 6.8 296,484 148,242 74,121 1,089 148,242 2025 2028

- Activity Start Date
Start Month: 5
Start Month: 2025

- Activity End Date
Indefinite: False
End Month: 5
End Month: 2028

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	2.618782
SO_x	0.016109
NO_x	4.981280
CO	7.181993
PM 10	17.895597

Pollutant	Total Emissions (TONs)
PM 2.5	0.176773
Pb	0.000000
NH_3	0.004999
CO_2e	1558.8

12.1 Site Grading Phase

12.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 5
Start Quarter: 1
Start Year: 2025

- Phase Duration
Number of Month: 6
Number of Days: 0

12.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 296484
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings
Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Tractors/Loaders/Backhoes Composite	2	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

12.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692

MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

12.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

12.2 Trenching/Excavating Phase

12.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 2
Number of Days: 0

12.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 1089
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

12.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

12.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

12.3 Building Construction Phase

12.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 11
Start Quarter: 1
Start Year: 2025

- Phase Duration
Number of Month: 30
Number of Days: 0

12.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 148242
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips
Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

12.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0680	0.0013	0.4222	0.3737	0.0143	0.0143	0.0061	128.77
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0236	0.0006	0.0859	0.2147	0.0025	0.0025	0.0021	54.449
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0287	0.0006	0.2329	0.2666	0.0080	0.0080	0.0025	61.057
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0214	0.0003	0.1373	0.1745	0.0051	0.0051	0.0019	25.650

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.3

									55
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

12.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

12.4 Architectural Coatings Phase

12.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 1
Number of Days: 0

12.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 148242
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

12.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

12.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

12.5 Paving Phase

12.5.1 Paving Phase Timeline Assumptions

- Phase Start Date

Start Month: 4

Start Quarter: 1
Start Year: 2028

- Phase Duration
Number of Month: 2
Number of Days: 0

12.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 74121

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	2	6
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

12.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

12.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)

1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

13. Construction / Demolition

13.1 General Information & Timeline Assumptions

- Activity Location
County: Ward
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: PSRE Storage Facility

- Activity Description:
Size (acres) Grading Building Construction Paving Trenching Architectural Coatings Start End
PSRE Storage Facility 0.2 10,000 5,000 2,500 200 5,000 2030 2032

- Activity Start Date
Start Month: 5
Start Month: 2030

- Activity End Date
Indefinite: False
End Month: 10
End Month: 2030

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.145895
SO_x	0.001661
NO_x	0.437397
CO	0.697807
PM 10	0.117576

Pollutant	Total Emissions (TONs)
PM 2.5	0.016069
Pb	0.000000
NH_3	0.000402
CO_2e	160.4

13.1 Site Grading Phase

13.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 5
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 1
Number of Days: 0

13.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 10000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings
Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

13.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692

MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

13.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

13.2 Trenching/Excavating Phase

13.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 9
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 1
Number of Days: 0

13.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 200
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

13.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

13.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

13.3 Building Construction Phase

13.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 3
Number of Days: 0

13.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 5000
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	4
Forklifts Composite	2	6
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips
Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

13.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0680	0.0013	0.4222	0.3737	0.0143	0.0143	0.0061	128.77
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0236	0.0006	0.0859	0.2147	0.0025	0.0025	0.0021	54.449
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.7

									04
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

13.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase

VMT_{VT} = BA * BH * (0.38 / 1000) * HT

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

13.4 Architectural Coatings Phase

13.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 9
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 1
Number of Days: 0

13.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 5000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

13.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.5

									67
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

13.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase
$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

13.5 Paving Phase

13.5.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 1
Number of Days: 0

13.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 2500

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

13.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.7

									50
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

13.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

14. Construction / Demolition

14.1 General Information & Timeline Assumptions

- Activity Location
County: Ward
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Field Depot

- Activity Description:
Size (acres) Grading Building Construction Paving Trenching Architectural Coatings Start End
Field Depot 0.2 10,000 5,000 2,500 200 5,000 2030 2032

- Activity Start Date
Start Month: 5
Start Month: 2030

- Activity End Date
Indefinite: False
End Month: 10
End Month: 2030

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.155861
SO_x	0.001862
NO_x	0.483902
CO	0.783816
PM 10	0.119060

Pollutant	Total Emissions (TONs)
PM 2.5	0.017549
Pb	0.000000
NH_3	0.000458
CO_2e	179.7

14.1 Site Grading Phase

14.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 5
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 1
Number of Days: 0

14.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 10000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings
Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

14.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692

MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

14.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

14.2 Trenching/Excavating Phase

14.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 9
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 1
Number of Days: 0

14.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 200
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

14.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

14.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

14.3 Building Construction Phase

14.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 4
Number of Days: 0

14.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 5000
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	4
Forklifts Composite	2	6
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips
Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

14.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0680	0.0013	0.4222	0.3737	0.0143	0.0143	0.0061	128.77
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0236	0.0006	0.0859	0.2147	0.0025	0.0025	0.0021	54.449
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.7

									04
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

14.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase

VMT_{VT} = BA * BH * (0.38 / 1000) * HT

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

14.4 Architectural Coatings Phase

14.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 9
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 1
Number of Days: 0

14.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 5000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

14.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.5

									67
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

14.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase
$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

14.5 Paving Phase

14.5.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 10
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 1
Number of Days: 0

14.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 5000

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

14.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.7

									50
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

14.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

15. Construction / Demolition

15.1 General Information & Timeline Assumptions

- Activity Location
County: Ward
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: RS/RV Maintenance Facility

- Activity Description:
23490

- Activity Start Date
Start Month: 1
Start Month: 2031

- Activity End Date
Indefinite: False
End Month: 11
End Month: 2031

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.542389
SO_x	0.004826
NO_x	1.471865
CO	2.219058
PM 10	0.543335

Pollutant	Total Emissions (TONs)
PM 2.5	0.052258
Pb	0.000000
NH_3	0.001475
CO_2e	464.1

15.1 Site Grading Phase

15.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2031

- Phase Duration
Number of Month: 1
Number of Days: 0

15.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 47000
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Site Grading Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

15.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

15.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

15.2 Trenching/Excavating Phase

15.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 9
Start Quarter: 1
Start Year: 2031

- Phase Duration
Number of Month: 1
Number of Days: 0

15.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 2349
Amount of Material to be Hauled On-Site (yd^3): 0
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

15.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

15.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

15.3 Building Construction Phase

15.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 2
Start Quarter: 1
Start Year: 2031

- Phase Duration
Number of Month: 10
Number of Days: 0

15.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 23490
Height of Building (ft): 12
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

15.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0680	0.0013	0.4222	0.3737	0.0143	0.0143	0.0061	128.77
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0236	0.0006	0.0859	0.2147	0.0025	0.0025	0.0021	54.449
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0287	0.0006	0.2329	0.2666	0.0080	0.0080	0.0025	61.057
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0214	0.0003	0.1373	0.1745	0.0051	0.0051	0.0019	25.650

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.0

									43
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

15.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
VMT_{VT} = BA * BH * (0.38 / 1000) * HT

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

15.4 Architectural Coatings Phase

15.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 11
Start Quarter: 1
Start Year: 2031

- Phase Duration
Number of Month: 1
Number of Days: 0

15.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 23490
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

15.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355
LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

15.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase
$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

15.5 Paving Phase

15.5.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 11
Start Quarter: 1
Start Year: 2031

- Phase Duration

Number of Month: 1
Number of Days: 0

15.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 23490

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	1	8
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

15.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.373	000.002	000.252	003.923	000.012	000.011		000.022	00315.355

LDGT	000.429	000.003	000.424	005.101	000.015	000.013		000.024	00405.567
HDGV	000.684	000.005	001.035	014.684	000.031	000.028		000.044	00739.043
LDDV	000.149	000.003	000.137	002.337	000.004	000.004		000.008	00301.750
LDDT	000.278	000.004	000.383	003.938	000.007	000.006		000.008	00428.704
HDDV	000.570	000.013	005.533	001.873	000.166	000.153		000.029	01470.692
MC	002.160	000.003	000.840	013.926	000.029	000.026		000.055	00399.677

15.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / $acre)^2$ / acre)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

D.2 REGIONAL AIR MONITORING DATA

Page intentionally left blank.

Air Quality Statistics Report

Geographic Area: North Dakota
Summary: by County
Year: 2021
Exceptional Events: Excluded (if any)
Statistics in red are above the level of the respective air quality standard

County	CO 1-hr 2nd Max	CO 8-hr 2nd Max	NO2 98th %ile	NO2 Ann. Mean	O3 1-hr 2nd Max	O3 8-hr 4th Max	SO2 99th %ile	SO2 24-hr 2nd Max	SO2 Ann. Mean	PM2.5 98th %ile	PM2.5 Wtd. Mean	PM10 24-hr 2nd Max	PM10 Annual Mean	Lead Max 3-mo Avg
Billings County, ND	.	.	.	.	0.07	0.069	6	4	2	27	5.4	.	.	.
Burke County, ND	.	.	11	2	0.07	0.061	20	7	1	38	7.9	82	16	.
Burleigh County, ND	1.3	0.8	30	5	0.07	0.06	12	3	0	47	9.8	135	23	.
Cass County, ND	.	.	31	4	0.07	0.063	.	.	.	60	11	.	.	.
Dunn County, ND	.	.	13	2	0.07	0.068	7	2	1	38	8.1	91	15	.
McKenzie County, ND	.	.	9	1	0.07	0.064	5	2	1	37	7.5	.	.	.
Mercer County, ND	.	.	17	3	0.08	0.065	30	7	1	41	8.1	.	.	.
Oliver County, ND	.	.	12	2	0.08	0.065	13	4	1	45	9.2	.	.	.
Ward County, ND	.	.	14	2	0.06	0.057	8	3	1	46	8.6	.	.	.
Williams County, ND	.	.	.	.	.	.	18	4	1	.	.	.	.	.

Get detailed information about this report, including column descriptions, at https://www.epa.gov/outdoor-air-quality-data/about-air-data-reports#con

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated by state, local, and tribal organizations who own and submit the data.

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated:September 30, 2022

Air Quality Statistics Report

Geographic Area: Wyoming
Summary: by County
Year: 2021
Exceptional Events: Excluded (if any)
Statistics in red are above the level of the respective air quality standard

County	CO 1-hr 2nd Max	CO 8-hr 2nd Max	NO2 98th %ile	NO2 Ann. Mean	O3 1-hr 2nd Max	O3 8-hr 4th Max	SO2 99th %ile	SO2 24-hr 2nd Max	SO2 Ann. Mean	PM2.5 98th %ile	PM2.5 Wtd. Mean	PM10 24-hr 2nd Max	PM10 Annual Mean	Lead Max 3-mo Avg
Albany County, WY	.	.	.	.	0.08	0.072	.	.	.	.	.	230	37	.
Big Horn County, WY	.	.	.	.	0.07	0.067	.	.	.	.	.	.	.	.
Campbell County, WY	.	.	8	1	0.08	0.075	.	.	.	.	.	154	34	.
Carbon County, WY	.	.	30	4	.	.	29	17	0	.	.	.	.	.
Converse County, WY	0.4	0.4	13	1	0.08	0.07	.	.	.	.	.	125	22	.
Fremont County, WY	.	.	4	1	0.08	0.073	48	8	1	23	4.8	61	8	.
Johnson County, WY	.	.	7	1	0.08	0.074	.	.	.	.	.	64	10	.
Laramie County, WY	0.3	0.3	29	3	0.08	0.075	4	2	0	27	5.1	63	14	.
Lincoln County, WY	.	.	.	.	.	.	.	.	.	.	.	97	16	.
Natrona County, WY	.	.	33	5	0.08	0.071	9	2	0	21	4.5	.	.	.
Platte County, WY	.	.	.	.	.	.	.	.	.	.	.	559	34	.
Sublette County, WY	.	.	17	2	0.08	0.071	.	.	.	24	4.4	59	10	.
Sweetwater County, WY	.	.	31	3	0.08	0.07	10	3	0	.	.	162	25	.
Teton County, WY	0.6	0.5	.	.	0.07	0.067	.	.	.	36	5.1	.	.	.
Weston County, WY	.	.	.	.	0.07	0.068	3	3	2	.	.	.	.	.

Get detailed information about this report, including column descriptions, at https://www.epa.gov/outdoor-air-quality-data/about-air-data-reports#con

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated by state, local, and tribal organizations who own and submit the data.

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated:September 30, 2022

Air Quality Statistics Report

Geographic Area: Nebraska
Summary: by County
Year: 2021
Exceptional Events: Excluded (if any)
Statistics in red are above the level of the respective air quality standard

County	CO 1-hr 2nd Max	CO 8-hr 2nd Max	NO2 98th %ile	NO2 Ann. Mean	O3 1-hr 2nd Max	O3 8-hr 4th Max	SO2 99th %ile	SO2 24-hr 2nd Max	SO2 Ann. Mean	PM2.5 98th %ile	PM2.5 Wtd. Mean	PM10 24-hr 2nd Max	PM10 Annual Mean	Lead Max 3-mo Avg
Cass County, NE	.	.	.	.	.	.	.	.	.	.	.	70	22	.
Douglas County, NE	1.3	1.1	.	.	0.08	0.066	48	14	1	22	8.5	67	24	.
Hall County, NE	.	.	.	.	.	.	.	.	.	22	7.4	.	.	.
Knox County, NE	.	.	.	.	0.08	0.072	.	.	.	.	.	.	.	.
Lancaster County, NE	.	.	.	.	0.07	0.059	.	.	.	25	7.2	.	.	.
Sarpy County, NE	.	.	.	.	.	.	.	.	.	26	8.8	.	.	.
Scotts Bluff County, NE	.	.	.	.	.	.	.	.	.	17	5	.	.	.
Washington County, NE	.	.	.	.	.	.	.	.	.	23	7.9	.	.	.

Get detailed information about this report, including column descriptions, at https://www.epa.gov/outdoor-air-quality-data/about-air-data-reports#con

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated by state, local, and tribal organizations who own and submit the data.

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated:September 30, 2022

Air Quality Statistics Report

Geographic Area: Colorado
Summary: by County
Year: 2021
Exceptional Events: Excluded (if any)
Statistics in red are above the level of the respective air quality standard

County	CO 1-hr 2nd Max	CO 8-hr 2nd Max	NO2 98th %ile	NO2 Ann. Mean	O3 1-hr 2nd Max	O3 8-hr 4th Max	SO2 99th %ile	SO2 24-hr 2nd Max	SO2 Ann. Mean	PM2.5 98th %ile	PM2.5 Wtd. Mean	PM10 24-hr 2nd Max	PM10 Annual Mean	Lead Max 3-mo Avg
Adams County, CO	1.8	1.4	55	15	0.09	0.079	6	3	1	.	.	93	39	.
Arapahoe County, CO	.	.	.	.	0.1	0.084	.	.	.	.	.	.	.	.
Archuleta County, CO	.	.	15	3	0.08	0.065	8	8	.	.	.	58	21	.
Boulder County, CO	.	.	.	.	0.1	0.082	.	.	.	54	10.8	51	22	.
Denver County, CO	2.3	1.8	71	26	0.1	0.083	7	3	0	37	10.1	63	30	.
Douglas County, CO	.	.	.	.	0.1	0.089	.	.	.	41	8	.	.	.
El Paso County, CO	1.8	1.1	.	.	0.09	0.078	10	3	1	21	6	.	.	.
Garfield County, CO	.	.	.	.	0.07	0.065	.	.	.	.	.	.	.	.
Gilpin County, CO	.	.	.	.	0.09	0.082	.	.	.	.	.	.	.	.
Gunnison County, CO	.	.	.	.	0.07	0.065	.	.	.	.	.	.	.	.
Jefferson County, CO	.	.	25	3	0.1	0.089	.	.	.	.	.	.	.	.
La Plata County, CO	0.8	0.4	23	5	0.08	0.068	.	.	.	.	.	.	.	.
Larimer County, CO	1.4	1	.	.	0.1	0.085	.	.	.	29	8.5	.	.	.
Mesa County, CO	.	.	.	.	0.07	0.068	.	.	.	18	6.2	40	20	.
Montezuma County, CO	.	.	.	.	0.07	0.067	.	.	.	.	.	.	.	.

Get detailed information about this report, including column descriptions, at https://www.epa.gov/outdoor-air-quality-data/about-air-data-reports#con

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated by state, local, and tribal organizations who own and submit the data.

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated:September 30, 2022

Air Quality Statistics Report

Geographic Area: Colorado
Summary: by County
Year: 2021
Exceptional Events: Excluded (if any)
Statistics in red are above the level of the respective air quality standard

County	CO 1-hr 2nd Max	CO 8-hr 2nd Max	NO2 98th %ile	NO2 Ann. Mean	O3 1-hr 2nd Max	O3 8-hr 4th Max	SO2 99th %ile	SO2 24-hr 2nd Max	SO2 Ann. Mean	PM2.5 98th %ile	PM2.5 Wtd. Mean	PM10 24-hr 2nd Max	PM10 Annual Mean	Lead Max 3-mo Avg
Pitkin County, CO	.	.	.	.	.	.	.	.	.	.	.	43	15	.
Prowers County, CO	.	.	.	.	.	.	.	.	.	.	.	124	24	.
Rio Blanco County, CO	.	.	22	2	0.08	0.07	.	.	.	26	9.5	.	.	.
Routt County, CO	.	.	.	.	.	.	.	.	.	.	.	69	18	.
San Miguel County, CO	.	.	.	.	.	.	.	.	.	.	.	55	18	.
Weld County, CO	0.8	0.6	42	6	0.1	0.083	.	.	.	31	9.8	.	.	.

Get detailed information about this report, including column descriptions, at https://www.epa.gov/outdoor-air-quality-data/about-air-data-reports#con

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated by state, local, and tribal organizations who own and submit the data.

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated:September 30, 2022

Air Quality Statistics Report

Geographic Area: Utah
Summary: by County
Year: 2021
Exceptional Events: Excluded (if any)
Statistics in red are above the level of the respective air quality standard

County	CO 1-hr 2nd Max	CO 8-hr 2nd Max	NO2 98th %ile	NO2 Ann. Mean	O3 1-hr 2nd Max	O3 8-hr 4th Max	SO2 99th %ile	SO2 24-hr 2nd Max	SO2 Ann. Mean	PM2.5 98th %ile	PM2.5 Wtd. Mean	PM10 24-hr 2nd Max	PM10 Annual Mean	Lead Max 3-mo Avg
Box Elder County, UT	.	.	10	1	0.08	0.071	.	.	.	.	.	.	.	.
Cache County, UT	.	.	31	5	0.08	0.068	.	.	.	46	9.3	.	.	.
Carbon County, UT	.	.	17	2	0.08	0.071	.	.	.	.	.	.	.	.
Davis County, UT	.	.	47	11	0.1	0.082	.	.	.	36	9.4	77	22	.
Duchesne County, UT	.	.	26	5	0.08	0.072	.	.	.	27	7.5	.	.	.
Garfield County, UT	.	.	.	.	0.08	0.069	.	.	.	.	.	.	.	.
Iron County, UT	.	.	35	6	0.08	0.065	.	.	.	21	6.5	.	.	.
Salt Lake County, UT	1.9	1.3	51	16	0.11	0.087	7	3	1	49	11	103	27	.
San Juan County, UT	.	.	.	.	0.08	0.069	.	.	.	.	.	.	.	.
Tooele County, UT	.	.	18	3	0.09	0.075	.	.	.	37	8.1	.	.	.
Uintah County, UT	.	.	26	4	0.08	0.072	.	.	.	27	7.3	.	.	.
Utah County, UT	1.5	1	42	9	0.1	0.077	.	.	.	36	8.2	100	22	.
Washington County, UT	.	.	25	3	0.08	0.067	.	.	.	19	5.9	.	.	.
Weber County, UT	1.1	1	42	8	0.09	0.077	.	.	.	32	8.1	86	21	.

Get detailed information about this report, including column descriptions, at https://www.epa.gov/outdoor-air-quality-data/about-air-data-reports#con

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated by state, local, and tribal organizations who own and submit the data.

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated:September 30, 2022

Air Quality Statistics Report

Geographic Area: Montana
Summary: by County
Year: 2021
Exceptional Events: Excluded (if any)
Statistics in red are above the level of the respective air quality standard

County	CO 1-hr 2nd Max	CO 8-hr 2nd Max	NO2 98th %ile	NO2 Ann. Mean	O3 1-hr 2nd Max	O3 8-hr 4th Max	SO2 99th %ile	SO2 24-hr 2nd Max	SO2 Ann. Mean	PM2.5 98th %ile	PM2.5 Wtd. Mean	PM10 24-hr 2nd Max	PM10 Annual Mean	Lead Max 3-mo Avg
Fergus County, MT	.	.	9	1	0.08	0.073	.	.	.	10	4	27	8	.
Flathead County, MT	.	.	.	.	0.07	0.057	.	.	.	14	5.2	85	24	.
Gallatin County, MT	1.6	0.9	.	.	.	.	.	.	.	34	5.7	.	.	.
Lewis and Clark County, MT	0.6	0.5	.	.	0.08	0.067	1	1	1	16	6.3	.	.	.
Lincoln County, MT	.	.	.	.	.	.	.	.	.	25	11	49	17	.
Missoula County, MT	.	.	.	.	0.07	0.065	.	.	.	14	7.4	48	14	.
Phillips County, MT	.	.	8	1	0.08	0.064	.	.	.	.	.	57	11	.
Powder River County, MT	.	.	10	1	0.09	0.069	.	.	.	12	5.5	.	.	.
Ravalli County, MT	.	.	.	.	.	.	.	.	.	12	5.2	.	.	.
Richland County, MT	.	.	11	1	0.07	0.07	.	.	.	11	4.2	72	11	.
Rosebud County, MT	.	.	.	1	0.07	0.066	.	.	.	.	.	.	.	.
Sanders County, MT	.	.	.	.	.	.	.	.	.	.	.	39	20	.
Silver Bow County, MT	.	.	.	.	.	.	.	.	.	22	7.5	64	17	.
Yellowstone County, MT	.	.	.	.	.	.	.	.	.	16	7	.	.	.

Get detailed information about this report, including column descriptions, at https://www.epa.gov/outdoor-air-quality-data/about-air-data-reports#con

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated by state, local, and tribal organizations who own and submit the data.

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated:September 30, 2022

Page intentionally left blank.

D.3 EMISSIONS FROM OPEN BURNING AT UTTR

Page intentionally left blank.

Table - Emissions from Open Burning at UTTR

Annual Number of Missiles	52	
Net Explosive Weight (3 Stages)	66,869	lbs
Overall Total Weigth	3,477,188	lbs
Pollutant	**Emissions Factor (lb/lb NEW)**	**Annual Emissions (tpy)**
VOC	6.97E-05	0.1
NOx	3.09E-03	5.4
CO	1.09E-03	1.9
Sox	0.00E+00	0.0
PM10	3.28E-02	57.0
PM2.5	3.28E-02	57.0
Pb	0.00E+00	0.0
CO2e	4.88E+01	84,843.4

Note: Source of calculations UTTR Air Emissions Inventory.

Page intentionally left blank.

APPENDIX E: BIOLOGICAL RESOURCES SUPPORTING INFORMATION

Contents

Page intentionally left blank.

E.1 HABITAT AND BIOLOGICAL CHARACTERISTICS OF SPECIAL STATUS SPECIES

Page intentionally left blank.

Appendix E.1 contains supplementary information for special status species discussed in the Sentinel EIS. Detailed information including distribution and occurrence information for each installation used in the effects evaluations is contained under each installation in Section 3.3 of the EIS.

Brassy Minnow (*Hybognathus hankinsoni*). Colorado lists the brassy minnow as a threatened species (CPW 2020a). The state of Wyoming ranks brassy minnow as vulnerable with populations and distribution in decline and habitat listed as the primary limiting factor (WGFD 2017c). In Nebraska, brassy minnow are not protected by the state and are classified as baitfish by NGPC. Harvest of the species is allowed under state law (Nebraska Administrative Code [NAC] § 163-2-001) (Steffensen et al. 2014). Threats to brassy minnow include altered flow regime, habitat fragmentation from flow reductions and physical barriers, limited pool habitat, removal of riparian vegetation, and predation by non-native fish (CPW 2020e; Scheurer and Fausch 2002; WGFD 2017c).

This small native fish of the Colorado plains, measuring 2.5–3 inches in length, can be mistaken for the plains minnow (*Hybognathus placitus*), which has an overlapping range (CPW 2020e; Scheurer and Fausch 2002). In Colorado, brassy minnows are found in the lower South Platte River basin and the backwaters of the Colorado River (CPW 2020e). They have also been found in Wyoming in the Niobrara, North Platte, and South Platte river drainages (WGFD 2017c). In Nebraska, the species has been found in the Missouri, Platte, and Niobrara rivers (Steffensen et al. 2014).

While brassy minnow have been found in large streams such as the Missouri River, their preferred habitat is low-velocity areas within small streams, including backwaters, pools, and beaver ponds that are connected to other waters during low-flow periods. They are generally found in locations with low turbidity, abundant wood and submerged aquatic vegetation, organic or gravel substrate, and an absence of large predatory fish (CPW 2020e; Scheurer and Fausch 2002; Steffensen et al. 2014; WGFD 2017c). Brassy minnow are herbivorous and primarily consume plankton and other organic material (CPW 2020e; WGFD 2017c).

A study in the Arikaree River, an intermittent stream in eastern Colorado, found the species is most likely to persist through the summer in deep pools connected to other aquatic habitats. The species withstood maximum summer temperatures as high as 97 °F and minimum dissolved oxygen levels as low as 0.01 milligram per liter. Stream drying was a greater threat to population persistence than water chemistry. The same study found adults spawning from mid-April to mid-May with larvae hatching from mid-May through mid-June (Scheurer and Fausch 2002).

Bull Trout (*Salvelinus confluentus*). In 1999, the USFWS listed all populations of bull trout in the conterminous United States as federally threatened (64 FR 58910, November 1, 1999). In 2010, the USFWS developed a critical habitat designation for bull trout for the states of Idaho,

Montana, Nevada, Oregon, and Washington (75 FR 63898, October 18, 2010). The state of Montana lists bull trout as a species of concern (MTNHP 2020a).

Primary threats to bull trout include habitat fragmentation and loss, competition and hybridization with nonnatives, and fish passage barriers (USFWS 2015c). Threats specific to the Blackfoot River subbasin include impacts on instream and riparian habitat from livestock grazing, forestry, and roads, which cause sedimentation, loss of large wood, and loss of pool habitat. Water withdrawals in the Blackfoot River mainstem and tributaries lead to high water temperatures and habitat fragmentation. Water quality in the Blackfoot River is also affected by contamination from historic mining. In lower reaches of the Blackfoot River, small population size and fragmentation are threats to bull trout. Finally, brook trout hybridization is a concern in spawning and rearing tributaries lower in the Blackfoot River subbasin (USFWS 2015c).

Bull trout require cold water habitat of less than 54 °F and are rarely found in temperatures higher than 59–64 °F. They require clear spawning and rearing substrate, free of fine sediment. Bull trout require complex instream habitat, including pools, overhanging banks, and large wood. Finally, bull trout require habitat connectivity between spawning and rearing habitat upstream and foraging, migration, and overwintering habitat downstream (MTNHP 2020a; USFWS 2015c, 2020k).

Bull trout exhibit both resident and migratory life forms. Resident fish spend their entire lives in their spawning and rearing tributary streams or nearby. Migratory fish spawn in tributaries where juveniles rear for 1–4 years and then migrate to larger rivers or lakes, where they spend their adult lives (MTNHP 2020a; USFWS 2015c). In the Blackfoot River, bull trout populations predominantly demonstrate fluvial life history forms, they spawn and rear in tributaries and migrate to larger rivers for adult life stages (USFWS 2015c). Bull trout spawn in cold, low-gradient streams with clean substrate in summer and fall and fry emerge 7–8 months later. Resident and juvenile migratory bull trout feed on insects, macro-zooplankton, and small fish. Adult migratory bull trout feed on smaller fish (MTNHP 2020a; USFWS 2015c).

Burrowing Owl (*Athene cunicularia*). The burrowing owl is a small, diurnal, ground-nesting bird that Colorado has listed as a state-designated threatened species. No state-level protections for the species are in place in either Nebraska or Wyoming, although it is listed as an SGCN in both states' SWAPs (Schneider et al. 2011; WGFD 2017b). Threats include predation, vehicle collisions, human disturbance (especially from agricultural activities, construction, and shooting), toxic chemicals (either direct mortality or loss of prey), and weather (severe hail). The badger is considered a major predator, with other known or suspected predators including domestic and feral cats and dogs, opossum (*Dedelphis virginiana*), weasel (*Mustela* spp.), skunk (*Mephitis*

spp.), coyote, bobcat (*Lynx rufus*), snake, hawk and falcon species, great horned owl, and American crow. Vehicle collisions are considered a serious cause of mortality in some locations because the burrowing owl tends to sit and hunt on roads at night (CPW 2003).

The burrowing owl ranges throughout western North America, including from the Dakotas south and west to the Pacific Coast. Burrowing owls can be found in suitable habitat throughout much of Colorado and Wyoming but is most common on the eastern side of both states. The areas of suitable habitat include the portion of the F.E. Warren Air Force Base (AFB) missile field that overlaps Weld and Logan counties in Colorado, especially the western half of the Pawnee National Grassland, and Laramie and Goshen counties in Wyoming (CPW 2020b; Klute et al. 2003; WGFD 2020b). Burrowing owls are most numerous in Nebraska's Panhandle, which includes the portion of the missile field that overlaps Banner, Cheyenne, and Kimball counties (Silcock and Jorgensen 2020a).

The burrowing owl is most likely to be found in dry open areas, shortgrass prairies with no trees. Their burrows can be found wherever prairie dog burrows—most commonly black-tailed prairie dog burrows—occur, such as golf courses, airports, vacant lots, pastures, and native grasslands. They tend to use active prairie dog colonies for nesting and perching mounds so they can easily see approaching predators and use taller vegetation when they forage for insects. In addition to prairie dog burrows, burrowing owls will also nest in burrows created by other mammals, such as ground squirrels (*Urocitellus* spp.) and badgers. The species is an opportunistic feeder, subsisting on insects, small rodents, amphibians, reptiles, and occasionally small birds (CPW 2003). Although burrowing owls are a diurnal owl species, they will hunt at all hours of the day and night, staying close to the ground and flying, hovering, walking, or running to seize prey in their talons (CLO 2020).

Of the estimated 700,000 burrowing owls that inhabit the United States, 15,000 migrate to Nebraska annually to nest, creating what appears to be a viable population for the state (Schumacher et al. 2016). Burrowing owls are migratory and arrive in Colorado to breed between late March and early April and begin nesting a few weeks later (Conway and Simon 2003). Breeding season occurs between April 21 and August 10. By mid-October, the owls begin their migration to the southern portions of their range, primarily to Arizona, California, New Mexico, Texas, and Mexico. They also have been known to winter in eastern Colorado and on the plains of Montana, depending on their distribution (CPW 2003).

Canada Lynx (*Lynx canadensis*). USFWS listed the contiguous United States distinct population segment (DPS) of Canada lynx (lynx) as threatened in March 2000 (65 FR 16052, March 24, 2000). Critical habitat for the lynx DPS was designated by the USFWS in 2006 and updated in 2014, based on the best available scientific data after taking into consideration impacts on the economy, national security, and other relevant fields resulting from particular areas being specified as critical habitat (79 FR 54782, September 12, 2014).

Lynx are broadly distributed throughout Canada and the state of Alaska, occupying boreal forests. The DPS occurs where these boreal forests become discontinuous and patchy and transition into Acadian, temperate, and subalpine forests in northern Maine, northeastern Minnesota, northwestern Montana, north Idaho, and north-central Washington (USFWS 2017c). The home range for individual lynx in the United States varies from 4,200 to 203,614 acres.

Although there are four documented occurrences of Canada lynx within the Little Belt Mountains, three of them are from historic harvest accounts recorded between 1979 and 1981. The fourth and most recent documented occurrence was recorded at the Showdown ski area in 2001 (MTNHP 2021b). Lynx were not detected during surveys conducted in the Little Blue Mountains in 2010 and 2013, or at 25 LF sites within the Malmstrom AFB missile field during surveys conducted between 2017 and 2018 (USFS 2016; Jordan and Melton 2019).

Colorado Butterfly Plant (*Oenothera coloradensis ssp. coloradensis*). Nebraska lists the Colorado butterfly plant as an endangered species, and Wyoming considers it a species of concern; however, no state-level protection exists for the species in Colorado or Wyoming (NGPC 2021). This species was previously a federally listed threatened species, but it was delisted in 2020. As part of the federal delisting process, USFWS is required to monitor the species for 5 years (USFWS 2019e). Threats that warranted the listing status of the species included overgrazing, haying and mowing, land conversion for cultivation and subdivision, and competition from noxious weeds (USFWS 2019e).

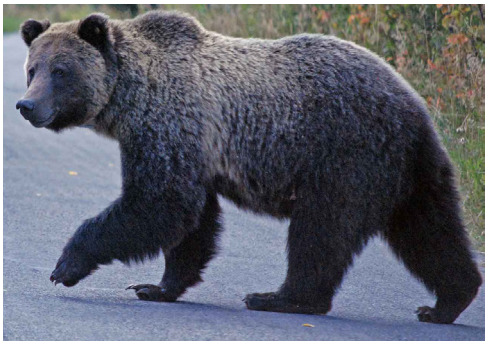
The Colorado Natural Heritage Program and NENHP, the agencies responsible for tracking special status species in Colorado and Nebraska, respectively, provide finer scale data to cooperating partners than does WYNDD; therefore, when occurrences overlap with project elements in those two states, the species is more likely to be present at or near the overlapping feature. Nebraska provides data to the nearest section (1 square mile) and Colorado provides either non-generalized data (for species occurrences on federal lands) or data generalized to 4 square miles (for species occurrences on private lands).

The Colorado butterfly plant prefers subirrigated alluvial soils and is found in wetlands and floodplains between 4,500 feet (ft) and 6,500 ft in elevation. It is found in open canopy areas that include mixed-grass prairie, native grasses, or sedges and bulrushes (*Scirpus* spp.) (CNHP 2019; USFWS 2019e). As a perennial forb, the Colorado butterfly plant is dormant in the winter months with aboveground vegetation emerging in the spring and persisting through the fall (USFWS 2019e).

Dakota Skipper (*Hesperia dacotae*). The Dakota skipper is federally listed as threatened (79 FR 63672, October 24, 2014) with designated critical habitat. This species is a small butterfly that prefers native high-quality undisturbed prairie habitats that contain abundant wildflowers that serve as a nectar source. The two main types of prairie in which the species occurs are (1) low-lying, wet-mesic bluestem prairies with little topographic relief and (2) prairies

with a high diversity and abundance of native forbs that are relatively dry and often found on ridges and hillsides (USFWS 2014a).

In their larval stage, Dakota skippers feed on native warm season grasses (USFWS 2014a). Adults of the species feed on nectar from a variety of flowers, including the purple coneflower (USFWS 2014a). The Dakota skipper has four basic life stages: egg, larva, pupa, and adult. During the brief adult period in June and July, the female lays eggs on the underside of leaves. Eggs take about 10 days to hatch into larvae. After hatching, larvae build shelters at or below the ground surface and emerge at night to feed on grass leaves. Larvae overwinter in shelters at the bases of native grasses and emerge in early spring. Pupation, which takes about 10 days, usually happens in June. Adult males emerge from pupae about 5 days before females, and the adults live for 3 weeks at most. This brief period is the only time they can reproduce. Females can lay up to 250 eggs each if they live for the full 3 weeks and adequate nectar resources are available (USFWS 2014a).



Grizzly Bear (*Ursus arctos horribilis*). The grizzly bear is federally listed as threatened with proposed critical habitat (40 FR 31734, July 28, 1975; 41 FR 48757, November 5, 1976). When the species was originally listed in 1975, recovery efforts centered on establishing viable populations in six ecosystems, or "recovery zones," where the species was known or believed to exist. The ecosystems each contained a large enough area with sufficient habitat to support a recovered grizzly bear population (USFWS 2021f).

The far western portion of the Malmstrom AFB missile field overlaps one of six recovery zones: the grizzly bear Northern Continental Divide Ecosystem (NCDE) (USFWS 1993, 2018c). Grizzly bear range has expanded beyond the NCDE recovery zone, which includes Teton and Lewis and Clark counties, toward Great Falls, thereby making travel of the species through the western portion of the Malmstrom AFB missile field likely (USFWS 1993, 2018c). On May 3 and July 2, 2018, grizzly bears were documented by motion-activated cameras at two LFs in Teton County on either side of Pishkun Reservoir (Jordan and Melton 2019), likely the result of exploratory movements by individuals traveling between ecosystems (USFWS 2021d).

The NCDE covers 8,932 square miles in northwest Montana, and the habitat within it varies from wet forested land in Glacier National Park in the northwesternmost portion of the NCDE to drier habitat in the eastern portion (USFWS 2021d). Based on good habitat connectivity with large populations of grizzly bears in Canada, the NCDE is potentially an important genetic corridor between the Canadian grizzly bear populations to the north, the Greater Yellowstone Ecosystem grizzly bear populations to the south, and the unoccupied habitat of the Bitterroot Ecosystem to the southwest (USFWS 2019a). Although USFWS does not provide mapped

proposed critical habitat, the NCDE generally overlaps six recovery zones in Idaho, Montana, and Wyoming (USFWS 2018c). An estimated 1,068 grizzly bears were present in the NCDE in 2019. The average human-caused mortality rate for grizzly bear in the NCDE between 2014 and 2019 was 25.3 bears per year (USFWS 2019a).

Grizzly bears need large tracts of relatively undisturbed land and, thus, the largest threat they face is the destruction and fragmentation of their habitat, especially from roads as well as logging, mining, livestock grazing, and outdoor recreation. A female grizzly bear's annual home range in the contiguous United States can vary from approximately 150 to 600 square miles, while a male's annual home range varies from 110 to 540 square miles (LeFranc et al. 1987; USFWS 2020c). Daily movement of individual bears varies, but research from the Greater Yellowstone Ecosystem has indicated that daily travel can exceed 6.2 miles (Craighead and Mitchell 1982). Grizzly bear movements differ based on season, food availability, and reproductive status (Nielsen et al. 2006). They are generally found at lower elevations in spring and higher elevations in mid-summer and winter (Dood et al. 2006).

Grizzly bears are omnivorous scavengers, spending most of their waking hours searching for food. They are adaptable and will eat insects, a variety of flowering plants, roots, tubers, grasses, berries, small rodents, fish, carrion, other meat sources (e.g., young and weakened animals), and even human garbage if it is easily accessible. Assimilated diet studies conducted by USFWS in the NCDE have shown that grizzly bears on the east, south, and southwest peripheries of the NCDE eat three times as much meat as bears in the northwest portion of the ecosystem (USFWS 2019b). During the spring, summer, and fall, they consume large amounts of food to survive their winter hibernation, which begins in late October or November (USFWS 2020a). They spend 3–6 months hibernating in underground dens to increase the chance of survival during periods when food is scarce, temperatures are low, and snow is deep. Males and females use the same general hibernation area, but the same den is rarely used twice by the same individual (USFWS 2011). They emerge from their dens in the spring, from late March through May, and during the early spring months move out of the snow to low-elevation areas to feed on winter-killed animals, ants, grasses and sedges, clover, dandelion, cow parsnip, and other plants (USFWS 2020a).

Little Brown Bat (*Myotis lucifugus*). As this EIS was being developed, the little brown bat was under a discretionary status review by USFWS to propose the species for listing or provide a notice of a not warranted finding (USFWS 2020l). This species is considered a Tier 1 SGCN (highest priority) in Nebraska and Colorado and a Tier II SGCN (moderate priority) in Wyoming (NENHP and NGPC 2020; CPW 2015; WGFD 2017b). Threats to little brown bat are similar to those for northern long-eared bat, but also include wind energy development (Kunz and Reichard 2010).

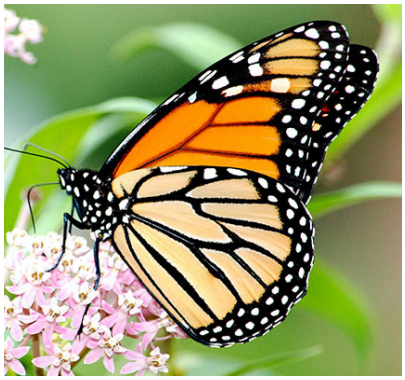
The little brown bat is widely distributed from central Alaska to central Mexico, occurring in every state of the United States, except Louisiana (Harvey et al. 2011). This species was formerly one of the most common bat species throughout the northern part of its range; however, white-nose

syndrome has caused population-level declines across the eastern portion of its range, which prompted the USFWS status review (Kunz and Reichard 2010). The little brown bat occurs in eastern Colorado, western Nebraska, and statewide in Wyoming, although detailed occurrence data are not available.

The little brown bat is considered a habitat generalist and occupies a wide range of natural habitats (i.e., forested, riparian, and rocky areas) as well as artificial habitats in urban environments (Adams 2003; Coleman and Barclay 2011). During the summer, this species roosts in a variety of structures, including human-made structures (buildings and bridges), trees, rock crevices, caves, and mines (Foresman and Badyaev 2012). Females form maternity colonies (up to thousands of individuals) and raise young within a wide variety of natural and artificial roosting structures; however, appropriate hibernacula are typically restricted to caves and mines. Little brown bats migrate regionally and may travel up to 400 miles from hibernacula to summer roosting locations (Norquay et al. 2013).

The little brown bat consumes insects, and, while its foraging habitat typically involves water sources such as open water or wetlands, it also includes forests and open clearings (Adams 2003).

Monarch Butterfly (*Danus plexippus*). In a recent 12-month finding, USFWS announced that listing the monarch butterfly as threatened or endangered was warranted but precluded by higher priority actions (85 FR 81813, December 17, 2020). As a result, the monarch butterfly is an ESA candidate species. Candidate species have no statutory protection under the ESA, although they may warrant protections and listing as threatened or endangered in the future (USFWS 2017a).



The monarch butterfly exhibits a cosmopolitan range, occurring in most temperate and tropical climates worldwide. The species originated in North America but has spread globally with the post-colonization worldwide introduction of milkweeds (*Asclepias* spp.), which is the monarch's larval host plant (Pierce et al. 2014). The monarch butterfly requires large intact stands of milkweed to lay eggs and breed. The adult monarch butterfly feeds on a wide variety of floral and nectar resources. An abundance and diversity of native wildflowers are an important component of monarch butterfly habitat.

Monarch butterflies lay their eggs on milkweed in the spring and summer. Eggs hatch within approximately 5 days. The larvae feed on their host plants for about 9–18 days before pupating into chrysalises and finally metamorphosing into adult butterflies about 6–14 days later. Multiple successive generations of monarchs exist during the breeding season. Most adults live 2–5 weeks and continue breeding. Toward the end of the summer breeding season and into the fall, a final generation of adult monarchs emerge that can live 6–9 months through the winter. These adults migrate to southern Mexico or coastal California. Those same individuals travel north into the United States beginning the following spring and move north over 2–3 subsequent generations (USFWS 2020f).

Mountain Plover (*Charadrius montanus*). Nebraska lists the mountain plover as a state-designated threatened grassland bird species. No state-level protections for the species are in place in Wyoming or Colorado, although it is listed as an SGCN in both states' SWAPs (CPW 2015; WGFD 2017c). Its breeding range has been affected by conversion of extensive unfragmented areas of native mixed-grass to shortgrass habitat to various agricultural uses; habitat conversion and fragmentation remains the primary threat to the species. As part of this conversion, grazers like bison (*Bison bison*) and prairie dogs, which had kept the vegetation short and exposed areas of bare ground, were removed (NGPC 2020a). USFWS estimates the current breeding population to be over 20,000 birds, with a geographically widespread breeding distribution and ability to use a variety of habitats (USFWS 2020l).

The breeding range for the mountain plover includes Colorado, Montana, New Mexico, the Texas Panhandle east to Nebraska, and Wyoming (CPW 2020b). The highest concentration of the species occurs in southern Kimball County in overgrazed areas, fallow fields, and other areas with very short grass (Bly et al. 2008). Mountain plovers arrive at breeding sites in Nebraska in mid- to late March and stay as late as September (Bly et al. 2008). This species is known to winter in Arizona, California, Nevada, Texas, and northern and central Mexico (CPW 2020b; NGPC 2020a).

Habitat for this species includes prairie grasslands, arid plains, and fallow fields (CPW 2020b). Mountain plover nest in shortgrass prairie habitat, often in areas that have been grazed by prairie dogs, bison, or cattle. They will also nest in heavily grazed tallgrass prairie, fallow fields, agricultural fields of dry-land wheat or millet, and other areas with extensive bare ground and often build their nests next to manure piles (CPW 2020b; NGPC 2020a).

The species' peak breeding season is mid-April to mid-July (CPW 2003). Mountain plover nests are a simple depression on the ground and often lined with dried grass in which the female usually lays three eggs. Chicks can run and capture their own food soon after hatching. Two to 5 days after hatching, adult plovers may take the brood of chicks as far as one-half mile to 1 mile away and stay in that location until the chicks are able to fly. Adults with broods move almost 1,000 ft per day on average, with home ranges being estimated to be an average of 140–365 acres in times of drought. Mountain plovers feed almost exclusively on invertebrates, with grasshoppers and beetles being the most common prey (NGPC 2020a).

Mountain plover are most vulnerable to predation as eggs and chicks, with predation being the primary cause of mortality. Documented predators on the breeding grounds of Colorado's eastern plains include swift fox, coyote, thirteen-lined ground squirrel, Swainson's hawk, prairie falcon (*Falco mexicanus*), and loggerhead shrike. Other causes of mortality include nest abandonment, death of chicks from overheating in the sun or exposure to the cold, death of eggs from flooding after spring storms, eggs or adults killed by hail, adults being struck by aircraft, and nest loss from cow trampling or plowing in an agriculture field (CPW 2003; NGPC 2020a).

North American Wolverine (*Gulo gulo luscus*). In October 2020, USFWS withdrew the proposed rule to list the DPS of wolverine occurring in the contiguous United States as a threatened species (85 FR 64618, October 13, 2020). The decision was based on an analysis of existing and potential threats that could affect the species. These threats —climate change, demographic stochasticity, and loss of genetic diversity—did not contribute as significantly to the species' status as first believed at the time the 2013 proposed rule was published (85 FR 64618, October 13, 2020).

On June 26, 2022, the United States District Court for the District of Montana Missoula Division overturned the 2020 USFWS decision not to list wolverines. It was determined that, in reaching the decision not to list the species, USFWS had disregarded the best available science regarding the impacts of climate change on wolverine habitat and genetic isolation within the DPS population. The court vacated the 2020 decision, which effectively returned the listing process to the original 2013 proposed rule (81 FR 71670, October 18, 2016). As a proposed species, the wolverine is eligible for consultation under ESA Section 7 during the 18 months USFWS has to reconsider the 2020 decision. No critical habitat has been designated for North American wolverine (USFWS 2020l). The wolverine population in the contiguous United States during the late 1800s and early 1900s was either in decline or extirpated in many areas because of unregulated trapping or habitat degradation. Since that time, the population has recovered from that decline to some extent in the western and northwestern United States. At the time the Sentinel EIS was being prepared, the species could be found in Alaska, California, Colorado, Idaho, Montana, Oregon, Utah, Washington, and Wyoming. Although population densities in the United States still are relatively low, reproduction occurs throughout the West in Idaho, Montana, Washington, and Wyoming (USFWS 2018f).

Wolverine habitat is characterized by large, mountainous, and essentially roadless areas associated with fir, pine, and larch trees; the species also uses aspen and cottonwood riparian areas. The species prefers areas with scattered timber and avoids clear-cuts and burns; however, dispersing individuals have been found far outside their usual habitats (MTNHP 2021). Persistent spring snowpack (generally from April 15 to May 14) is an important factor in determining suitable habitat for wolverine, particularly for den site location (Copeland et al. 2010; McKelvey et al. 2011). It provides the young with a thermal advantage and refuge from predators, aiding in their survival (Copeland et al. 2010). Home ranges are very large, but vary based on availability of food, gender, age, and differences in habitat (USFWS 2020l). In a recent central Idaho study, 18 wolverines were monitored for 6 years with male winter home ranges from 155 square miles to 833 square miles and female winter home ranges from 49 square miles to 162 square miles (Heinemeyer et al. 2017).

The range of the wolverine in Montana is limited to the western portion of the state, including portions of the Malmstrom AFB missile field (MTNHP 2020a). Malmstrom AFB does not contain wolverine habitat. Small amounts of conifer habitat exist within the missile field that could be within a wolverine home range or support dispersing individuals—individuals making the

movement from their birth site to higher quality territory, where they may reproduce or would have reproduced if they had survived and found mates (Howard 1960), but the missile field does not receive an appropriate amount of snow for denning (3–16 ft deep) (Magoun and Copeland 1998). No wolverine were identified in recent mammal surveys at 25 missile sites within the missile field (Jordan and Melton 2019). Within the last 22 years, 13 wolverine occurrences have been documented within 5 miles of project elements (MTNHP 2022).

Wolverines maintain large territories in remote areas. They occur in peninsular extensions of boreal forests in montane regions of the western United States as well as in alpine habitat (Magoun and Copeland 1998; Copeland et al. 2010). According to USFWS (2018f), wolverines in Montana make seasonal shifts in elevation during the summer and winter. In the summer, the species moves to, and remains in, higher and colder elevations. This shift may be centered around the thermal advantage a wolverine may have when temperatures are high and more breeding opportunities are available. During the winter, wolverines in Montana move slightly lower in elevation but avoid big game winter range and areas of human activity. This smaller shift in habitat use may be caused by a need for persistent snow cover for denning, inaccessible areas to keep young away from predators, and an increase in food availability.

This solitary and secretive species mates from May through August, followed by a short gestation period (30–40 days), with births of young peaking in late December to early February (USFWS 2018f). In the United States, the denning season occurs from February to April (Magoun and Copeland 1998). Young (kits) are born and reared in carefully constructed, well-camouflaged, and inaccessible reproductive dens—a natal den is used for giving birth; a maternal den is used after giving birth but before young are weaned—under deep snow from late January to mid-April. The young are weaned from late April to May at 9–10 weeks old. Young begin to travel with the female from April through June, becoming independent any time from August to January of the following year. Dispersal occurs in February to mid-April when young are 10–15 months old (USFWS 2018f).

Wolverines are considered opportunistic foragers that are largely dependent on large mammal (deer and elk) as prey or carrion, but also have a diverse diet that includes hoary marmots (*Marmota caligata*); small mammals, such as Columbian ground squirrels (*Urocitellus columbianus*); birds; porcupine (*Erethizon dorsatum*); fish; mice; beaver (*Castor canadensis*); antlers, bones, and skulls; fruits and berries; and insects as well as mountain goats (*Oreamnos americanus*) and bighorn sheep (*Ovis canadensis*) found at high elevations in their North American winter range. To adjust its nutritional needs during its life stages (e.g., lactation), the species switches food resources seasonally depending on prey availability. Wolverines also are known to cache food during the summer and winter months, an important behavior that provides a food source when prey availability and carrion access are limited (USFWS 2018f).

Northern Long-Eared Bat (*Myotis septentrionalis*). The federal listing of the northern long-eared bat as endangered (87 FR 73488, November 30, 2022) was delayed until March 31, 2023, to enable USFWS to finalize conservation tools and guidance documents (88 FR 4908, January 26, 2023). There is no designated critical habitat for the species (81 FR 24707, April 27, 2016). From a state perspective, northern long-eared bat is state listed as threatened in Nebraska and as an SGCN in Wyoming (NGPC 2020b; WGFD 2017b). The primary threat to the northern long-eared bat is white-nose syndrome, which is a fungal disease affecting many hibernating bat species in the United States and has caused a precipitous decline in bat numbers (81 FR 1900, January 14, 2016). Additional threats include disturbance of winter hibernacula and tree removal. The northern long-eared bat has a wide distribution range across the eastern and midwestern United States that includes 38 states and the District of Columbia (81 FR 24707, April 27, 2016).

During the spring, summer, and early fall, northern long-eared bats roost in forested habitat typically within 50 miles of wintering sites (USFWS 2014c). Suitable summer habitat for the species is described in the 2020 *Range-Wide Indiana Bat Survey Guidelines* as:

> …forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches [7.6 centimeters] diameter at breast height that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors (USFWS 2020j).

The location and connectivity of suitable habitat are also important features needed to support roosting northern long-eared bats. Since this species rarely travels more than 1,000 ft from forested habitat, surrounding trees must be within close proximity in order to provide some form of habitat connectivity. Trees farther away from forested habitat and those scattered throughout highly developed urban areas do not provide suitable habitat for northern long-eared bats (USFWS 2020j). In addition to natural structures, northern long-eared bats also roost in human-made structures like bridges and buildings (Feldhammer et al. 2003; USFWS 2015b). The bat's use of bridges, which can represent an important roosting resource, is not necessarily influenced by surrounding habitat (i.e., forest cover) (Hendricks et al. 2005), although northern long-eared bats also require some form of forest near artificial roosts.

The northern long-eared bat arrives at hibernacula in August or September, begins hibernation in October and November, and exits hibernacula in March or April (USFWS 2014c). The species prefers hibernacula with large entrances, such as caves and mines, as well as less traditional hibernacula, such as dams, dry wells, and other human-made structures. No hibernacula for this species have been identified in Wyoming (Heidi Riddle, USFWS, personal communication, January 27, 2021), but the presence of individuals in summer indicate hibernacula occur somewhere in the state (WGFD n.d.).

The northern long-eared bat gleans and hawks for insects in the sub-canopy of deciduous and mixed forests (Harvey et al. 2011). It might also, however, occur in forest clearings, above roadways, along trails, or near open water features (USFWS 2014c).

Piping Plover (*Charadrius melodus*). The Northern Great Plains (NGP) population of piping plover was federally listed as threatened in 1985 (50 FR 50726, December 11, 1985). In North Dakota, piping plover have a state rank of Level II SCP; Level II species have a moderate or high level of conservation priority with a substantial level of non-state wildlife grant funding available to support conservation efforts (NDGF 2020c). USFWS designated critical habitat for the NGP population of piping plover in 2002 (67 FR 57638, September 11, 2002). Designated critical habitat for piping plover includes prairie alkali wetlands and the surrounding shoreline, including 200 ft of uplands above the high-water mark; river channels and associated sandbars and islands; reservoirs and their sparsely vegetated shorelines, peninsulas, and islands; and inland lakes and their sparsely vegetated shorelines and peninsulas (50 CFR Part 17). Piping plovers occur in North Dakota from mid-April through August; peak breeding season occurs from late May to mid-July (NDGF 2020c; USFWS 1988). Most of the NGP piping plover winter along the Texas coast, extending into Mexico (USFWS 2012).

Within the NGP, beach/ shoreline width as well as quantity and distribution of vegetation are important factors affecting habitat selection and reproductive success, with wider beaches containing clumped, sparse vegetation being the species' preferred habitat (USFWS 1988). More than three-fourths of piping plovers in North Dakota nest on prairie alkali lakes, while the remainder use the Missouri River (Air Force 2020d). In addition to breeding in beach/ shoreline habitats, the species also uses them for foraging and during migration. Piping plovers forage on mud and sand substrates, preying primarily on beetles and small soft-bodied invertebrates from the riverine waterline (NGPC 2020a).

Piping plover nests are shallow scraped depressions in substrates ranging from fine-grained sand to mixtures of sand and pebbles or cobble (USFWS 2016a). Piping plovers generally fledge only a single brood per season with egg incubation averaging 25–28 days and chicks fledging 25–35 days after hatching (USFWS 2016a). Piping plover chicks are precocial, often leaving the nest within hours of hatching. Disturbance during nesting is a major threat in many areas, as human presence may inhibit courtship, incubation, and brooding (NatureServe 2020). Nesting piping plovers have been recorded flushing during egg incubation from disturbances of 16–984 ft away, with results from most studies averaging 154–256 ft (USFWS 2014b). USFWS recommends protecting nests by at least 164 ft and then extending that to a 3,281-foot buffer until the chicks have fledged—are 35 days old—to protect them from being crushed by vehicles (USFWS 2014b).

Plains Sharp-Tailed Grouse (*Tympanuchus phasianellus jamesii*). Colorado lists the plains sharp-tailed grouse as a state-designated endangered grassland bird species. Neither Nebraska nor Wyoming has state-level protections in place for the species and it is locally common in parts of both states (Oedekoven and Zornes 2007; Silcock and Jorgensen 2021). The species historically nested over much of the northern two-thirds of the eastern prairies in Colorado but populations have greatly declined as a result of grassland conversion to cropland and urban development, which still remains the major threat to the species (CPW 2020b).

Sharp-tailed grouse occupy a broad range of habitats from northern prairies to boreal bogs. Wherever the species is found, areas of dense shrubs provide shelter, food, and nest sites (CLO 2020). The plains sharp-tailed grouse is typically found in medium-to-tall grasslands often interspersed with small shrubs, where the bird can find areas for nesting, loafing, night-roosting cover, and courtship (CPW 2020b; Marks 2007). And, for winter shelter and food, it uses rolling hills that contain scrub oak thickets and grassy glades, preferring brushy sites with scrub oak (*Quercus* spp.), serviceberry (*Amelanchier* spp.), and willows (Marks 2007).

Habitat for plains sharp-tailed grouse is divided into breeding, nesting/brood rearing, and winter habitat, and they will move short distances between these habitats. Breeding activities occur on leks between April and late May, with males arriving in March. Lek sites usually consist of elevated areas such as knolls, ridges, hilltops, or flat areas that provide a view of the surrounding area and where there is sparse vegetation. Once breeding has ended, sharp-tailed grouse move up to 1 mile away from the leks to their nest sites, with eggs being laid 1–3 days after mating. Nesting and brood-rearing sites are used in the late spring and summer and consist of north- or northeast-facing slopes with vegetative cover that is denser than the surrounding areas. Nests are shallow, hollowed-out depressions in the ground lined with vegetation and commonly located under shrubs. Females lay an average of 12 eggs that will hatch simultaneously, with the chicks capable of feeding themselves and leaving the nest within 24 hours. Females will often move broods to open areas containing succulent vegetation and insects. Winter habitat includes shrubby rangelands, riparian areas, mountain shrub communities, and deciduous and open coniferous woods. Plains sharp-tailed grouse move to their winter sites between late November and early January, depending on when the snow arrives (Marks 2007).

Sharp-tailed grouse eat a variety of forb seeds, waste grain, and leafy green vegetation. During winter months, they also feed on buds and catkins of deciduous trees or shrubs and berries. Chicks consume insects almost exclusively for several weeks after hatching (CPW 2020b).

Preble's Meadow Jumping Mouse (*Zapus hudsonius preblei*). Preble's meadow jumping mouse (Preble's) is a federally listed threatened subspecies of meadow jumping mouse (*Zapus hudsonius*) associated with woody riparian habitats (63 FR 26517, May 13, 1998). USFWS has designated critical habitat in Colorado but none in Wyoming (75 FR 78430, December 15, 2010) and completed a recovery plan for this subspecies (USFWS 2018d). Preble's is also a state-listed threatened subspecies in Colorado and an SGCN in Wyoming (WGFD 2017b).

Threats to the subspecies include habitat loss, modification, and fragmentation. The decline in the extent and quality of Preble's habitat is considered the main factor threatening the subspecies, with agricultural uses in Wyoming and urban/suburban and recreational development in Colorado being the largest contributors to the threat. The lack of existing regulatory mechanisms to protect the subspecies, secondary impacts from human development (human presence, noise, and increased lighting), and instability of small populations are also identified as threats to Preble's (USFWS 2018d).

The distribution of Preble's includes both the North and South Platte river basins, from the eastern edge of the Laramie Mountains and the Laramie Plains in southeastern Wyoming south along the eastern edge of the Front Range in Colorado and into the headwaters of the Arkansas River Basin near Colorado Springs, CO. Preble's is typically found at elevations from 4,650 ft to 8,100 ft in Wyoming and up to 7,600 ft in Colorado. The lower elevations of this range include the semiarid climate of southeastern Wyoming and riparian corridors of eastern Colorado. The eastern boundary for Preble's distribution is defined ecologically by the dry, short-grass prairie that is the prevalent habitat (USFWS 2018d).

No designated critical habitat for the Preble's meadow jumping mouse (Preble's) is mapped within F.E. Warren AFB, the missile field, or Camp Guernsey (USFWS 2021b). The nearest mapped critical habitat is in Larimer County, CO, west of the F.E. Warren AFB missile field (USFWS 2021e).

Preble's typical habitat includes areas in or near stream channels (from large perennial rivers to small ephemeral drainages), riparian habitats, wetlands such as wet meadows and wet-to-mesic hayfields, and areas within 300 ft of the 100-year floodplain of rivers and creeks (USFWS 2004, 2018d). Preble's primarily inhabit heavily vegetated, high plains riparian habitat often reaching to foothills riparian habitats and immediately adjacent to upland habitats in dense shrub, grass, and forb cover within the foothills of southeastern Wyoming south to Colorado Springs along the eastern edge of the Front Range in Colorado. The eastern boundary is defined by the dry shortgrass prairie, which might present a barrier to eastward expansion of Preble's (USFWS 2018d, 2020h; CPW 2020c).

Preble's are primarily nocturnal (active at night) or crepuscular (active at dawn and dusk) but also might be active during the day (USFWS 2018d). Preble's enter a full hibernation in underground burrows within 3 ft to 330 ft of a perennial or intermittent stream channel, typically at the base of vegetation with a northerly aspect, in September or October and do not emerge until May (USFWS 2018d; CPW 2020c).

Seasonal shifts in diet along with shifts in mouse movements suggest that Preble's may require specific seasonal diets, especially with the physiological demands of hibernation. Based on fecal analyses, Preble's eat arthropods, fungus, moss, pollen, willow, lamb's quarters (*Chenopodium* sp.), Russian thistle (*Salsola* sp.), sunflowers (*Helianthus* spp.), sedges (*Carex* spp.), mullein (*Verbascum thapsus*), grasses (*Bromus, Festuca, Poa, Sporobolus*, and *Agropyron* spp.), bladderpod (*Lesquerella* sp.), rushes (*Equisetum* sp.), and assorted seeds (USFWS 2018d).

Red Knot (*Calidris canutus rufa*). The federally threatened red knot (79 FR 73705, December 11, 2014) is a medium-sized sandpiper that breeds in the high arctic zones of North America and Greenland and can make extraordinarily long-distance migrations (over 9,000 miles) between arctic breeding habitats and coastal wintering sites in the southern latitudes of South America (Baker et al. 2020; USFWS 2020k). During the 1980s, red knot populations dramatically declined around the world, especially the subspecies *C. c. rufa* (79 FR 73705, December 11, 2014), which declined from about 82,000 individuals to fewer than 30,000 in 2010 mostly because of loss of migratory and winter habitat (Baker et al. 2020). While most winter in parts of South America, red knots are known to winter along the southeastern United States coast and the Caribbean (estimated at 15,500 birds) and the Texas and northern Mexico Gulf coasts (roughly estimated at 2,000–4,000 birds with an additional 2,500 in coastal Louisiana) from late July to early May the following year (Skagen et al. 1999; Baker et al. 2020; USFWS 2020k). In 2010, geolocator results from eight red knots wintering in Texas showed that all of them used a central flyway route across the midwestern United States; five of the birds used stopover areas in Saskatchewan, Canada; and in North Dakota (Newstead et al. 2013).

During the migration and winter seasons, red knots feed on a variety of freshwater and marine invertebrates, including horseshoe crab (*Limulus polyphemus*) eggs and mussel (*Mytilus* sp.) spat in habitats consisting of sandy beaches, edges of salt marshes, tidal mudflats, wash fans, and open wetlands with up to 2.4 inches of standing water (Skagen et al. 1999; Baker et al. 2020; USFWS 2020k). During nonfeeding activity, red knots will roost on sandy beaches above the high tide line or sparsely vegetated areas along wetlands and open estuaries close to feeding areas. There is no designated critical habitat for this species.

Regal Fritillary (*Speyeria idalia*). The regal fritillary is under a USFWS federal status review for listing under the ESA with an expected decision date in 2022 (USFWS 2020l).

The regal fritillary can be found as far west as the Rocky Mountains; north to southern Canada; east to Maine, Pennsylvania, and Virginia; and south to northern Arkansas and Tennessee (Williams 2002; WildEarth Guardians 2013). Severe range reductions have occurred in the eastern portions of the species' range and, while poorly studied, the core area of the species current distribution is thought to be in Iowa, Kansas, Missouri, and Nebraska. However, populations have also been documented in eastern Colorado and eastern Wyoming (Powell et al. 2006; WildEarth Guardians 2013).

Limited information is available regarding the distribution of this species within its current range; however, the regal fritillary is primarily found in large patches of undisturbed high-quality native prairies that contain various violet (*Viola*) species, which the regal fritillary uses as its host plant (Powell et al. 2006; Vaughan and Shepherd 2005). On these high-quality native prairies, weeds and woody vegetation are minimal and native warm-season grasses (*Andropogon geradi, Panicum virgatum*) and forbs (*Echinacea* spp., *Rudbeckia* spp.) are common. Furthermore, regal fritillary relies on an abundance of host plant and various violet species (*Viola pedata, Viola pedatifida, Viola lanceolata*) as a natal food source to complete their life cycle. These violets are a common component of high-quality native prairies where regal fritillary are found.

Adult regal fritillaries are strong fliers that are active from the middle of June to the middle of September (Williams 2002; Selby 2007). While adults have been documented up to 100 miles from their birth location (Debinski and Drobney 2000), they usually stay within their natal area (WildEarth Guardians 2013). Eggs are laid on vegetation in early September where they incubate until hatching about 25 days later in October (Selby 2007). The larvae overwinter in the leaf litter until early spring (March), when they resume activity and begin to feed on young violet leaves until June (Selby 2007; Vaughan and Shepherd 2005). In June, regal fritillary pupate for about 17 days on the soil surface and emerge as adult butterflies in the middle of the month, completing the species' life cycle (Selby 2007).

An estimated 2,500 to 1,000,000 regal fritillary individuals currently exist, spread out across 100–200 viable breeding populations (WildEarth Guardians 2013; NatureServe 2017); about 100–200 breeding adult butterflies are present in each population (Powell et al. 2006). Adult butterflies are prolific breeders and lay far more eggs than the number that make it to adulthood. Populations have severely declined over the past 30 years and the species is now extirpated from many states east of the Mississippi River.

The primary threat facing the species is habitat loss by conversion of high-quality native prairie to agriculture and other anthropogenic uses (WildEarth Guardians 2013). Furthermore, restoration of these native prairies is difficult (i.e., are often not successful), thereby further exacerbating the threats to this species from habitat loss (Kindscher and Tieszen 1998).

Swift Fox (*Vulpes velox*). The swift fox is a state-listed endangered species in Nebraska. The species also occurs in Colorado and Wyoming, where it is afforded no federal- or state-level protections (CNHP 2020; NENHP 2020; USFWS 2020l, WYNDD 2021). Threats include coyote-caused mortality, predation, rodent and predator control efforts, habitat loss from agricultural conversion, and vehicle-caused mortality (Stephens and Anderson 2005; Albrecht 2015).

The swift fox is native to the shortgrass and mixed-grass prairies of the Great Plains in the central United States. Evaluations of the distribution of the species indicate a nearly continuous distribution from Wyoming south through eastern Colorado, western Kansas, the Oklahoma Panhandle, eastern New Mexico, and small portions of the northern panhandle of Texas; scattered populations can also be found in Montana, Nebraska, and South Dakota (FR 66 1298, January 8, 2001).

Swift fox requires open shortgrass prairies with few shrubs and trees, and often uses prairie dog (*Cynomys* spp.) and badger burrows to raise its young and avoid predators. Swift fox also constructs its own burrows, which are commonly found in roadside ditches. While multiple burrows can be used year-round, typically a single burrow is occupied for the denning season after breeding occurs. Breeding occurs from February to May and the denning season occurs between April and August (NGPC 2020c). In the early fall, kits leave the den and find their own territory (NGPC 2020a). Individual swift fox have home ranges up to about 12.5 square miles (Albrecht 2015). They frequently use roads as movement corridors (Albrecht 2015).

Thick-Billed Longspur (*Rhynchophanes mccownii*). Thick-billed longspur, formerly called McCown's longspur (Audubon 2020), is a small migratory grassland bird listed as a proposed state-designated threatened species in Nebraska (NENHP and NGPC 2020). No state-level protections for the species are in place in either Colorado or Wyoming, although it is listed as an SGCN in both states' SWAPs (CPW 2015; WGFD 2017b). The NGPC Wildlife Division concluded in 2018 that thick-billed longspur should be placed on the state list because it had experienced substantial, well-documented long-term population declines in Nebraska and throughout its range. North American Breeding Bird Survey trend analysis shows sharp annual declines of 5.9 percent between 1966 and 2015 (NGPC 2018). The primary threats to the species include the loss of breeding habitat caused by fragmentation as the landscape is converted from grasslands to other uses, loss of native shortgrass prairie in the winter range, land management practices that maintain higher vegetation structure, and the elimination of colonies of black-tailed prairie dog (*Cynomys ludovicianus*). In addition, high predation rates from predators such as short-eared owl (*Asio flammeus*), Swainson's hawk (*Buteo swainsoni*), American crow (*Corvus brachyrhyncos*), loggerhead shrike (*Lanius luduvicianus*), American badger (*Taxidea taxus*), ground squirrel (*Spermophilus* spp.), striped skunk (*Mephitis mephitis*), red fox, swift fox,

coyote, long-tailed weasel, deer mouse (*Peromyscus maniculatus*), and snakes appear to limit longspur populations more than food availability (NGPC 2012).

The current distribution of the thick-billed longspur in Nebraska is limited to the western side of the state. It is a common spring and fall migrant in the western Panhandle and breeds locally within two areas: the southwestern Panhandle, including most of Kimball, southern Banner, and western Cheyenne counties, and the prairies of central and southern Sioux County, NE (NGPC 2018).

The thick-billed longspur is a nocturnal migratory bird species that typically arrives at breeding sites during the month of April but sometimes as early as March. The breeding season lasts through mid-August. Fall migration normally occurs in late October, sometimes lasting into November, with immense flocks migrating together to the southwestern United States, including New Mexico, Oklahoma, and west Texas, and extending into northwestern Mexico (NGPC 2018).

General habitat for the species is typically sparse shortgrass prairies, plowed and stubble agricultural fields, and other areas with little vegetative litter or bare ground. Breeding habitat is dry, shortgrass plains, with nesting occurring in light-to-moderately grazed native shortgrass prairie, frequently in prairie dog colonies. Nesting in agricultural fields has also been documented. Females lay two to five eggs in a grass-lined hollow or scrape on open ground. Longspurs frequently produce two broods in a nesting season. Their primary diet includes insects (e.g., grasshoppers, beetles, and moths) in the summer and seeds from grasses and forbs in fall and winter (NGPC 2018).

Ute Ladies'-Tresses (*Spiranthes diluvialis*). Ute ladies'-tresses is federally listed as a threatened species (57 FR 2048, January 17, 1992). Nebraska lists the Ute ladies'-tresses as a threatened species and Wyoming considers it a species of concern; however, no state-level protection exists for the species in Colorado (NGPC 2020c). The primary threats facing the Ute ladies'-tresses are habitat destruction, competition with invasive plant species, and natural ecological succession (Fertig et al. 2005).

The Ute ladies'-tresses can be found in moist meadows associated with perennial streams and floodplains. Other habitat includes groundwater-fed springs, subirrigated meadows, and historic stream channels. The species also has been found in human-modified wetlands, including along irrigation canals, berms, levees, irrigated meadows, excavated gravel pits, roadside barrow pits, and reservoirs (Fertig et al. 2005).

Ute ladies'-tresses do not flower every year and sometimes remain dormant for multiple years. Dormant individuals remain underground during periods of drought, relying on their tuberous root and relationship with mycorrhizal fungi to obtain water and nutrients (NGPC 2020a). Mycorrhizal fungi are found underground near or within plant roots and form a symbiotic relationship with certain species that allows for exchange of nutrients. Therefore, when

conducting field surveys, USFWS recommends surveys take place over a 3-year period to confirm the absence of the species in suitable habitat (USFWS 1992).

Western Bumble Bee (*Bombus occidentalis*). The western bumble bee is under a USFWS federal status review for listing under the ESA (USFWS 2020l).

The historic distribution of the western bumble bee within the continental United States included northern Arizona, northern California, Colorado, Idaho, Montana, western Nebraska, New Mexico, Oregon, western South Dakota, Utah, Washington, and Wyoming. The species also extended northward into western Alberta, British Columbia; southwestern Saskatchewan; and the Yukon Territory in Canada and into Alaska (Evans et al. 2008). The species has undergone a dramatic decline across western North America. It is now absent from coastal valleys of central California, western Oregon, western Washington, and British Columbia and has undergone a severe reduction in abundance across other portions of its range (Defenders of Wildlife 2015). The Rocky Mountains currently harbor the only healthy remnant populations of the western bumble bee, where it is limited to a few isolated areas (Defenders of Wildlife 2015).

Western bumble bees are generalist pollinators that can be found in a wide variety of habitats, including open grassy areas, prairie, urban parks and gardens, sagebrush steppe, mountain meadows, and alpine tundra (MTNHP 2021a; Williams et al. 2014). The species' primary habitat requirements include access to nectar and pollen resources, including native wildflowers, non-native weedy species, and bee-pollinated crops such as cranberries and almonds (Evans et al. 2008).

Western bumble bees are social ground-nesting insects and form colonies that include a queen that lays eggs; worker bees that collect nectar/pollen, defend the colony, and feed larvae; and males that mate with the queen (Defenders of Wildlife 2015). Colonies begin a new life cycle every year when, in the spring (March–June), a queen emerges from hibernation and selects a new underground nest site. Colonies disband in the late fall (September–November), and all worker bees and males die off as the new queen enters hibernation (Williams et al. 2014).

Whitebark Pine (*Pinus albicaulis*). Whitebark pine is federally listed as threatened (87 FR 76882, December 15, 2022); no critical habitat has been proposed or designated for this species. The greatest threats to the species are white pine blister rust, an infection caused by the non-native rust fungus (*Cronartium ribicola*), and mountain pine beetle (*Dendroctonus ponderosae*). Both these threats have caused widespread mortality of the species (Fryer 2002).

Whitebark pine is a coniferous tree that occurs sporadically in mid-elevation forests, is common in subalpine forests, and is a dominant species in high-elevation tree-line communities. In Montana, the species is usually found between 5,900 ft and 9,300 ft. At higher elevations, the tree is often the dominant species in a stand, but at lower elevations it co-occurs with lodgepole pine (*Pinus contorta*), subalpine fir (*Abies lasiocarpa*), and Engelmann spruce (*Picea engelmannii*) (Fryer 2002). Whitebark pine is most easily distinguished from the morphologically similar limber pine (*Pinus flexilis*) by its cones. Newly formed cones of whitebark pine are purple and spherical, whereas the cones of limber pine are green and oblong (USFS 2021a).

The species' large and highly nutritious seeds are dispersed almost exclusively by the Clark's nutcracker (*Nucifraga columbiana*) through its seed-caching activities (USFWS 2016c; Tomback et al. 2001). The bird assists with propagating whitebark pine by caching its seeds in the ground and may bury seeds both near parent trees and up to 14 miles away at varying elevations and habitats (USFWS 2016c). Whitebark pine typically sheds pollen in mature treetops during the first half of July. Seeds and cones ripen from August through October (Arno and Hoff 1989). Whitebark pine trees typically begin producing cones at the age of 25–30 years and cones take approximately 2 years to mature on the tree before they are able to be dispersed and cached by Clark's nutcracker (Daw 2020). Germination rates are low and often occur 2 or more years after caching by a Clark's nutcracker (Tilley et al. 2011).

Considered a keystone species of upper subalpine ecosystems, whitebark pine increases the biodiversity of a community as a nutritious food source; through its ability to provide shelter, nesting sites, and burrows; through its structural complexity and stress-tolerance; and through its ability to reduce the rate of snowmelt and erosion (Fryer 2002).

Whooping Crane (*Grus americana*). The whooping crane is federally listed as endangered (35 FR 8495, June 2, 1970) with designated critical habitat. In North Dakota, the whooping crane has a state rank of Level III SCP (NDGF 2020c). Threats to whooping cranes include loss of migratory habitat to development, collisions with utility lines, potential collisions with wind energy turbines, and changes in wintering habitat (CWS and USFWS 2007a). As a result of intensive management, the remaining wild population (Aransas-Wood Buffalo) has increased from 15 birds in 1941 to an estimated 506 birds at the time USFWS conducted the 2019/2020 winter whooping crane survey at Aransas NWR (USFWS 2020m).

Whooping cranes migrate from wintering grounds in Aransas NWR (Texas) to the same breeding territory in Wood Buffalo National Park in Alberta, Canada, and nest in the same general area each year. Whooping cranes migrate singly, in pairs, in family groups, or in small flocks and are sometimes accompanied by sandhill cranes (*Grus canadensis*). They use traditional migration staging areas located close to their breeding grounds, where they gather before the first segment of their fall migration. Whooping cranes are diurnal migrants, stopping regularly to rest and feed at stopover areas along the migration route (Armbruster 1990; USFWS 2019g). The migration route for the Aransas-Wood Buffalo population is well defined. Ninety-four percent of all spring and fall migratory observations occurred within a 200-mile-wide

migratory corridor (CWS and USFWS 2007a). This migratory route extends over 5,000 miles from the breeding ground in Canada through Alberta, North Dakota, South Dakota, Nebraska, Kansas, and Oklahoma to the wintering grounds on the Texas coast.

The cranes use a variety of habitats where they feed mostly on frogs, fish, plant tubers, insects, crayfish, and waste agriculture grains. Their migratory stopover habitat includes large, shallow wetlands for roosting, smaller wetlands for foraging, and harvested cropland for foraging (NDGF 2020c, 2020d).

Page intentionally left blank.

E.2 TABLES SUPPORTING THE BIOLOGICAL RESOURCES EFFECTS ANALYSIS

Page intentionally left blank.

E.2 TABLES SUPPORTING THE BIOLOGICAL RESOURCES EFFECTS ANALYSIS

Contents

Page intentionally left blank.

E.2.1 NOXIOUS WEEDS DOCUMENTED OR WITH POTENTIAL TO OCCUR ON F.E. WARREN AFB, MISSILE FIELD, AND CAMP GUERNSEY

Scientific Name [a] (Synonym)	Common Name [a]	Noxious Weed Status			Facility (State: County) [e]		
		Colorado [b]	Nebraska [c]	Wyoming [d]	F.E. Warren AFB (WY: Laramie)	Missile Field (CO: Logan, Weld NE: Banner, Cheyenne, Kimball WY: Goshen, Laramie)	Camp Guernsey (WY: Platte)
Acroptilon repens (*Centaurea repens*)	Russian knapweed	List B	Watch List - Category 2	State Listed	P	P	D
Aegilops cylindrica	jointed goatgrass	List B	Not listed	Declared Weed: Laramie and Platte	P	P	-
Ailanthus altissima	tree of heaven	Watch List	Not listed	Not listed	N/A	P	N/A
Amaranthus palmeri	Palmer amaranth	Not listed	Not listed	Declared Weed: Goshen	N/A	P	N/A
Ambrosia tomentosa (*Franseria discolor*)	skeletonleaf bursage	Not listed	Not listed	State Listed	P	P	D
Anthemis cotula	mayweed chamomile	List B	Not listed	Not listed	N/A	P	N/A
Arctium minus	common burdock; lesser burdock	List C	Not listed	State Listed	D	P	D
Artemisia absinthium	absinth wormwood	List B	Watch List - Category 2	Not listed	N/A	P	N/A
Berteroa incana	hoary alyssum	Watch List	Not listed	Not listed	N/A	P	N/A
Bromus tectorum	cheatgrass	List C	Not listed	Declared Weed: Laramie and Platte	P	P	D
Cardaria draba (*Lepidium draba*)	whitetop; hoary cress	List B	Not listed	State Listed	D	P	P
Cardaria pubescens	hairy whitetop	Not listed	Not listed	State Listed	-	P	D
Carduus acanthoides	plumeless thistle	List B	State Listed	State Listed	-	P	D
Carduus nutans	musk thistle	List B	State Listed	State Listed	D	P	D
Carum carvi	wild caraway	List B	Not listed	Not listed	N/A	P	N/A
Centaurea diffusa	diffuse knapweed	List B	State Listed	State Listed	D	P	D
Centaurea solstitialis	yellow starthistle	List A	Not listed	State Listed	-	-	P
Centaurea stoebe (*Centaurea maculosa*)	spotted knapweed	List B	State Listed	State Listed	P	P	D
Cichorium intybus	chicory	List C	Not listed	Declared Weed: Platte	N/A	P	D
Cirsium arvense	Canada thistle	List B	State Listed	State Listed	D	P	D
Cirsium vulgare	bull thistle	List B	Not listed	Declared Weed: Platte	N/A	P	D
Conium maculatum	poison hemlock	List C	Not listed	Declared Weed: Platte	N/A	P	P
Convolvulus arvensis	field bindweed	List C	Not listed	State Listed	D	P	D
Conyza canadensis	marestail	Not listed	Not listed	Declared Weed: Goshen	N/A	P	N/A
Cynoglossum officinale	houndstongue	List B	Watch List - Category 2	State Listed	D	P	D
Cyperus esculentus	yellow nutsedge	List B	Not listed	Not listed	N/A	P	N/A
Delphinium geyeri	Geyer's larkspur	Not listed	Not listed	Declared Weed: Laramie and Platte	P	P	D
Dipsacus fullonum	common teasel	List B	Not listed	Not listed	N/A	P	N/A
Dipsacus laciniatus	cutleaf teasel	List B	Not listed	Not listed	N/A	P	N/A
Echium vulgare	Viper's bugloss	Not listed	Not listed	Declared Weed: Laramie	P	P	N/A
Elaeagnus angustifolia	Russian olive	List B	Not listed	State Listed	D	P	D
Elymus repens (*Agropyron repens*)	quackgrass	List C	Not listed	State Listed	P	P	D

Scientific Name [a] (Synonym)	Common Name [a]	Noxious Weed Status			Facility (State: County) [e]		
		Colorado [b]	Nebraska [c]	Wyoming [d]	F.E. Warren AFB (WY: Laramie)	Missile Field (CO: Logan, Weld NE: Banner, Cheyenne, Kimball WY: Goshen, Laramie)	Camp Guernsey (WY: Platte)
Epilobium hirsutum	hairy willow-herb	List A	Not listed	Not listed	N/A	P	N/A
Erodium cicutarium	redstem filaree	List C	Not listed	Not listed	N/A	P	N/A
Euphorbia cyparissias	cypress spuge	List A	Not listed	Not listed	N/A	P	N/A
Euphorbia esula	leafy spurge	List B	State Listed	State Listed	D	P	D
Glycyrrhiza lepidota	wild licorice	Not listed	Not listed	Declared Weed: Goshen, Laramie, Platte	P	P	D
Grindelia squarrosa	curlycup gumweed	Not listed	Not listed	Declared Weed: Platte	N/A	N/A	D
Gypsophila paniculata	baby's breath	Watch List	Not listed	Not listed	N/A	P	N/A
Helianthus annuus	common sunflower	Not listed	Not listed	Declared Weed: Platte	N/A	N/A	D
Hesperis matronalis	dame's rocket	List B	Not listed	Not listed	N/A	P	N/A
Heterotheca villosa	hairy goldenaster	Not listed	Not listed	Declared Weed: Laramie	P	P	N/A
Hyosocamus niger	black henbane	List B	Watch List - Category 2	State Listed	P	P	D
Hypericum perforatum	common St Johnswort	List C	Watch List - Category 2	State Listed	-	-	P
Isatis tinctoria	Dyer's woad	List A	Not listed	State Listed	-	-	P
Lepidium latifolium	perennial pepperweed	List B	Not listed	State Listed	P	P	P
Leucanthemum vulgare (*Chrysanthemum leucanthemum*)	oxeye daisy	List B	Not listed	State Listed	-	P	P
Linaria dalmatica	Dalmatian toadflax	List B	Watch List - Category 2	State Listed	D	P	D
Linaria vulgaris	yellow toadflax	List B	Not listed	State Listed	P	P	P
Lupinus wyethii	Wyeth lupine	Not listed	Not listed	Declared Weed: Platte	N/A	N/A	P
Lythrum salicaria, L. virgatum	purple loosestrife	List A	State Listed	State Listed	D	P	P
Myriophyllum spicatum	Eurasian watermilfoil	List B	Not listed	Not listed	N/A	P	N/A
Onopordum acanthium	Scotch thistle	List B	Not listed	State Listed	D	P	D
Opuntia polyacantha	plains pricklypear; hairspine pricklypear	Not listed	Not listed	Declared Weed: Laramie and Platte	P	P	D
Oxytropis sericea	silky crazyweed; haresfoot locoweed	Not listed	Not listed	Declared Weed: Platte	P	P	D
Oxytropis spp.	locoweed	Not listed	Not listed	Declared Weed: Laramie	P	P	N/A
Panicum miliaceum	wild proso millet	List C	Not listed	Not listed	N/A	P	N/A
Phragmites australis	common reed	Watch List	State Listed	Not listed	N/A	P	N/A
Polygonum cuspidatum (*Fallopia japonica*)	Japanese knotweed	List A	State Listed	Not listed	N/A	P	N/A
Potentilla recta	sulfur cinquefoil	List B	Not listed	Not listed	N/A	P	N/A
Rumex crispus	curly dock	Not listed	Not listed	Declared Weed: Platte	N/A	N/A	D
Saponaria officinalis	bouncingbet	List B	Not listed	Not listed	N/A	P	N/A
Solanum rostratum	buffalobur nightshade	Not listed	Not listed	Declared Weed: Platte	N/A	N/A	D
Sonchus arvensis	perennial sowthistle	List C	Not listed	State Listed	P	P	D

Scientific Name [a] (Synonym)	Common Name [a]	Noxious Weed Status			Facility (State: County) [e]		
		Colorado [b]	Nebraska [c]	Wyoming [d]	F.E. Warren AFB (WY: Laramie)	Missile Field (CO: Logan, Weld NE: Banner, Cheyenne, Kimball WY: Goshen, Laramie)	Camp Guernsey (WY: Platte)
Sorghum halepense	Johnsongrass	List C	Not listed	Not listed	N/A	P	N/A
Sphaerophysa salsula	swainsonpea	Watch List	Not listed	Not listed	N/A	P	N/A
Tamarix spp.	saltcedar, tamarisk	List B	State Listed	State Listed	P	P	D
Tanacetum vulgare	common tansy	List B	Not listed	State Listed	-	P	-
Tragopogon dubius	yellow salsify; western salsify	Not listed	Not listed	Declared Weed: Platte	N/A	N/A	D
Tribulus terrestris	puncturevine	List C	Not listed	Declared Weed: Goshen, Laramie, Platte	P	P	D
Verbascum blattaria	moth mullein	List B	Not listed	Not listed	N/A	P	N/A
Verbascum thapsus	common mullein	List C	Not listed	State Listed	P	P	D
Xanthium strumarium	rough (common) cocklebur	Not listed	Not listed	Declared Weed: Platte	N/A	N/A	D
Yucca glauca	Great Plains yucca	Not listed	Not listed	Declared Weed: Platte	N/A	N/A	D

[a] Only state or county listed noxious weeds documented or with potential to occur in one or more states or counties where proposed Project activities would occur are included in table.

[b] Based on CDA 2020. Noxious weed status definitions per CDA 2019a.
List A Species: Species that are designated by the Commissioner for eradication.
List B Species: Species for which the Commissioner, in consultation with the state noxious weed advisory committee, local governments, and other interested parties, develops and implements state noxious weed management plans designed to stop the continued spread of these species.
List C Species: Species for which the Commissioner, in consultation with the state noxious weed advisory committee, local governments, and other interested parties, will develop and implement state noxious weed management plans designed to support the efforts of local governing bodies to facilitate more effective integrated weed management on private and public lands. The goal of such plans will not be to stop the continued spread of these species but to provide additional education, research, and biological control resources to jurisdictions that choose to require management of List C species.
Watch List: Species that have been determined to pose a potential threat to the agricultural productivity and environmental values of the lands of the state. The Watch List is intended to serve advisory and educational purposes only. Its purpose is to encourage the identification and reporting of these species to the Commissioner in order to facilitate the collection of information to assist the Commissioner in determining which species should be designated as noxious weeds.

[c] **State Listed:** A species is listed as a noxious weed for the entire State of Nebraska. Nebraska does not divide state listed noxious weeds into separate lists or priorities for control.
Watch List: The watch lists includes invasive plants species to "be on the watch for" in Nebraska. Watch List species are designated by Nebraska Natural Legacy Plan ecoregion and the counties that occur in that ecoregion. The Watch List is separated into categories; "**Category 2**" Watch List weeds are "Priority Species" indicating they are top priority for eradication of new and existing populations (NISP 2021).

[d] **State Listed:** A species is listed as a noxious weed for the entire State of Wyoming. Wyoming does not divide state listed noxious weeds into separate lists or priorities for control.
Declared Weed: In addition to state designated noxious weeds, each county in Wyoming may declare additional species as noxious weeds in that county.

[e] **D** = Documented occurrence (per Tasker et al. 2019; WYARNG 2020c).
P = Potential to occur. A species is listed as having the potential to occur if there is a documented occurrence of that species in one or more of the counties where proposed Project activities would occur (per CDA 2019b; EDDMapS 2020; USDA NRCS 2020; NWCA 2021; WWPC 2020).
N/A = Species not listed as a noxious weed in the state or counties where proposed Project activities or facilities would occur.
"-" = Species is listed as a noxious weed in the state or counties where proposed Project activities or facilities would occur, but species has not been documented in the state or counties where proposed activities or facilities would occur (per CDA 2019b; EDDMapS 2020; USDA NRCS 2020; NWCA 2021; WWPC 2020).

E.2.2 FEDERALLY AND STATE-LISTED SPECIES CONSIDERED FOR F.E. WARREN AFB, MISSILE FIELD, AND CAMP GUERNSEY

Common Name	Scientific Name	Status				Expected Habitat	Likelihood of Occurrence	Documented Within Vicinity of Proposed Action	Justification
		USFWS [a]	State (WY) [b, c]	State (CO) [d, e]	State (NE) [f]				
Mammals									
Black-footed ferret	*Mustela nigripes*	E/XN	SGCN	SE	SE	Closely tied to prairie dogs (*Cynomys spp*.) throughout their range and have been found only in association with prairie dog colonies. They are, therefore, limited to the same open habitat used by prairie dogs: grasslands, steppe, and shrub-steppe (MTNHP 2020a).	Very Unlikely	No	The USFWS-mapped range extends into the western edge of Weld County, Colorado, and the Proposed Action is located on the eastern half of the county (USFWS 2020l). The only known occurrences of this species are within reintroduction sites and none of these reintroduction sites are within the vicinity of the Proposed Action. F.E. Warren AFB maintains a pre-release conditioning facility that prepares captive raised ferrets for release to reintroduction sites (Air Force 2020f). There are no recent natural heritage occurrences mapped within the vicinity of the Proposed Action in Wyoming or Nebraska (NENHP 2020; WYNDD 2020a; WYNDD 2021). There are four historic occurrences for the species that overlap the Proposed Action in Colorado, although the species is currently listed as extirpated in the state (CNHP 2021). It is very unlikely that black-footed ferret would be in the vicinity of the Proposed Action because they are only known to exist at reintroduction sites.
Little brown bat	*Myotis lucifugus*	SOC, Under Review	SGCN	-	-	In the west, this species is found mainly in mountainous and riparian areas in a wide variety of forest habitats; from tree-lined xeric-scrub to aspen meadows and Pacific Northwest coniferous rain forests. This species is closely associated with humans, often forming nursery colonies in buildings, attics, and other artificial structures (BCI 2020).	Potential	Yes	Approximate range extends throughout parts of the Proposed Action in all of Wyoming and parts of Colorado and Nebraska (BCI 2020). Little brown bat is documented as using Bat's Balcony in the North Training Area for hibernation at Camp Guernsey (WYARNG 2020c). Little brown bat is documented in Camp Guernsey and potentially present throughout the Proposed Action based on the overlapping range and available habitat. The species is under a USWFS discretionary status review, with an expected decision in late 2022.
Northern long-eared bat	*Myotis septentrionalis*	T with 4(d) rule	SGCN	-	SGCN	Suitable summer habitat consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed nonforested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields, and pastures. Individual trees may be considered suitable habitat when they exhibit characteristics of suitable roost trees (i.e., live trees and/or snags ≥ 3 inches diameter at breast height that have exfoliating bark, cracks, crevices, and/or cavities) and are within 1,000 feet of other forested/wooded habitat. This species has also been observed roosting in human-made structures such as buildings, barns, bridges, and bat houses during summer (USFWS 2014c).	Potential	Yes	The USFWS-mapped range map does not overlap counties associated with the Proposed Action (USFWS 2020l; USFWS 2021e). Acoustic surveys conducted on Camp Guernsey in the summer of 2019 recorded bat calls that, when analyzed using USFWS accepted acoustic survey protocols, were classified as northern-long eared bat calls. However, other myotis species with similar acoustic signatures are known to be present on Camp Guernsey and classification of myotis species can be difficult using acoustic methods alone. Northern-long eared bats have never been captured during mist nest sampling, although, capture effort has been minimal on Camp Guernsey (WYARNG 2020c). Through conversations with the USFWS, the WYARNG has decided to analyze all proposed actions at Camp Guernsey as if the northern long-eared bat is present (WYARNG 2020c), therefore, effects on this species are considered for the Proposed Action at Camp Guernsey. No maternity roost trees, hibernacula, or swarming sites for northern-long eared bat have been identified on Camp Guernsey to date (WYARNG 2020c). The species was confirmed in the Black Hills in Goshen County, WY which provides similar habitats as Camp Guernsey (WYARNG 2020c). The northern long-eared bat is assumed present at Camp Guernsey and therefore within the Proposed Action.

Common Name	Scientific Name	Status				Expected Habitat	Likelihood of Occurrence	Documented Within Vicinity of Proposed Action	Justification
		USFWS [a]	State (WY) [b, c]	State (CO) [d, e]	State (NE) [f]				
Preble's meadow jumping mouse	*Zapus hudsonius preblei*	T/CH	SGCN	ST	-	Primarily inhabits heavily vegetated, riparian (streamside) habitats and immediately adjacent upland habitats in dense shrub, grass, and forb cover within the foothills of southeastern Wyoming south to Colorado Springs along the eastern edge of the Front Range of Colorado (USFWS 2020a; CPW 2020c).	Potential	Yes	The USFWS-mapped range overlaps the Proposed Action in Laramie and Platte counties, Wyoming, and the western portion of Weld County, Colorado (USFWS 2020l). Preble's cannot be reliably distinguished from other subspecies of meadow jumping mouse (*Zapus hudsonius*) or from western jumping mouse (*Zapus princeps*) in the field. Consequently, genetic analyses are the only accepted method for identification where species ranges overlap (WGFD 2021). Preble's is suspected to occur on the F.E. Warren AFB, based on trapping surveys conducted over the past 21 years along the 1.4-mile section of Crow Creek that runs through the installation's boundaries (Air Force 2020f). Its identification, however, has not been genetically confirmed (Abernethy 2021). It is unlikely Preble's is present at Camp Guernsey because of the lack of a well-developed shrub layer in the riparian areas and the lack of documented occurrences anywhere near the installation (WYARNG 2020c). There are occurrence polygons mapped northwest, west, and southwest of the F.E. Warren AFB missile field associated with the Proposed Action (CNHP 2021; WYNDD 2020a). Most of these occurrences are historic, dating back to 1895, with the most recent occurrence in 2001 (CNHP 2021; WYNDD 2020a). Preble's is documented within the F.E. Warren AFB and the range overlaps the missile field; therefore, the species could occur in other areas associated with the Proposed Action.
Swift fox	*Vulpes velox*	-	SGCN	SC	SE	Require open shortgrass or mixed-grass prairies with few shrubs and trees and often use prairie dog and badger burrows to raise their young (NGPC 2020c).	Potential	Yes	The USFWS-mapped range overlaps the Proposed Action in Weld and Logan counties, Colorado (USFWS 2020l). Swift fox were documented at the F.E. Warren AFB in 2018 and 2020 (Air Force 2020f; Alex Schubert, USFWS, personal communication, December 11, 2020). There are no known occurrences at Camp Guernsey, but the species has the potential to occur as there is open shortgrass prairie denning habitat and there are documented occurrences in Platte County, WY (WYNDD 2021). Natural heritage occurrences have been documented throughout the F.E. Warren missile field associated with the Proposed Action, including Kimball, Banner and Cheyanne counties in Nebraska (CNHP 2021; NENHP 2020). Swift fox is documented on the F.E. Warren AFB and its range overlaps the missile field, therefore the species could occur in other areas associated with the Proposed Action.
Birds									
Burrowing owl	*Athene cunicularia*	-	SGCN	ST	SGCN	Usually breed in dry, open areas with short grasses and no trees. They nest and roost in underground burrows created by prairie dogs, ground squirrels and badgers. Burrowing owls can be found where suitable burrows exist on golf courses, cemeteries, airports, vacant lots, university campuses, and pastures (CPW 2020e).	Potential	Yes	The USFWS-mapped range encompasses all of the Proposed Action (USFWS 2020l). Burrowing owls have been documented at F.E. Warren AFB (Air Force 2020f), one in 2010 in the southern portion of the base and one in 2017 in the northern portion of the base with no nesting activities observed for either sighting (Alex Schubert, USFWS, personal communication, December 11, 2020; WYNDD 2020a). Burrowing owls are known to nest in two black-tailed prairie dog colonies in the South Training Area at Camp Guernsey (WYARNG 2020c). Natural heritage occurrences and eBird observations are within the vicinity of the Proposed Action (eBird 2020; WYNDD 2020a; WYNDD 2021). Burrowing owls are documented at both installations and there is potential for the species to use grassland habitats within the missile field.

Common Name	Scientific Name	Status				Expected Habitat	Likelihood of Occurrence	Documented Within Vicinity of Proposed Action	Justification
		USFWS [a]	State (WY) [b, c]	State (CO) [d, e]	State (NE) [f]				
Eastern black rail	*Laterallus jamaicensis ssp. jamaicensis*	T	-	-	-	Found in coastal marine and freshwater estuarine wetlands and interior palustrine wetlands (USFWS 2019e). In Colorado, they use shallow wetlands dominated by cattails (*Typha* spp.), hardstem bulrush (*Scirpus acutus* var. *acutus*), soft-stemmed bulrush (*Schoenoplectus tabernaemontani*), and willow (*Salix* spp.) in the overstory (Griese et al. 1980).	Very Unlikely	No	The subspecies is not known to occur in Nebraska or Wyoming and there are no natural heritage occurrences or eBird observations in Logan and Weld counties in Colorado (CNHP 2021; eBird 2020; NENHP 2020; WYNDD 2020a; WYNDD 2021). There are no wetland habitats on F.E. Warren AFB or Camp Guernsey that would support eastern black rails. The Proposed Action do not contain wetlands large enough or with the proper habitat structure to support eastern black rails, therefore it is unlikely for the species to occur (USGS 2019; USFWS 2019d).
Least tern	*Sternula antillarum*	Delisted	-	SE	SE	Nest on sparsely vegetated sandbars along major rivers, sandy shores of reservoirs, and gravel pits (USFWS 2019c). In Colorado, they nest along the Arkansas River. In Nebraska, they feed along the central Platte River and nest in colonies a short distance away (PRRIP 2020).	Unlikely	No	The USFWS-mapped range is not within the vicinity of the Proposed Action (USFWS 2020l). No natural heritage occurrences are recorded in any county within the Proposed Action (CNHP 2021; NENHP 2020; WYNDD 2020a; WYNDD 2021). There were seven eBird observations located outside the Proposed Action, one in Oliver Reservoir (Kimball County, Nebraska), one in Goshen County, Wyoming, and the rest in Weld and Logan counties, Colorado (eBird 2020). Least terns are not expected to occur within the vicinity of the Proposed Action because of the distant proximity to the central Platte River and other large water bodies. There would be no new water withdrawals to the Platte River system as a result of the proposed Project.
Mexican spotted owl	*Strix occidentalis lucida*	T/CH	-	ST	-	Commonly found in mixed-conifer and pine-oak forests, however, they can also be found in pinyon-juniper and ponderosa pine forests. Most nests are in caves or on cliff ledges in steep-walled canyons (USFWS 2000).	Very Unlikely	No	The USFWS-mapped range does not overlap counties associated with the Proposed Action (USFWS 2020l). There are no natural heritage occurrences or eBird observations within the vicinity of the Proposed Action and forested habitat is not present; therefore, it is very unlikely for Mexican spotted owl to occur (CNHP 2021; eBird 2020; NENHP 2020; USGS 2016; WYNDD 2020a; WYNDD 2021).
Mountain plover	*Charadrius montanus*	-	SGCN	SGCN	ST	Habitat includes prairie grasslands, arid plains, and fallow fields (CPW 2020e).	Potential	Yes	The breeding range covers most of the Proposed Action (CLO 2020). Mountain plovers have been documented throughout the F.E. Warren AFB missile field (CNHP 2021; eBird 2020; NENHP 2020; WYNDD 2020a). There is high potential for mountain plover to occur within the vicinity of the Proposed Action because of the overlapping breeding range and documented occurrences.
Piping plover	*Charadrius melodus*	T/CH	-	ST	SGCN	Sandy upper beaches, especially where scattered grass tufts are present, and on sparsely vegetated shores and islands of shallow lakes, reservoirs, alkali wetlands, rivers, and impoundments (Haig and Plissner 1993; NatureServe 2020).	Unlikely	No	The breeding range is not within the vicinity of the Proposed Action (NGPC 2020c; CLO 2020). There were no eBird observations or natural heritage occurrences for this species within the vicinity of the Proposed Action (CNHP 2021; eBird 2020; NENHP 2020; WYNDD 2020a; WYNDD 2021). There were a limited number of distant eBird observations in Colorado, recorded in a few large waterbodies in May or August, indicating this species may migrate through the area, using these large water bodies as migratory stopover habitat (eBird 2020). Piping plover are not expected to occur within the vicinity of the Proposed Action because of the distant proximity of the limited migratory occurrences.
Plains sharp-tailed grouse	*Tympanuchus phasianellus jamesii*	-	-	SE	-	Medium-to-tall grasslands for nesting, loafing, and night-roosting cover. Lek sites include short vegetation and have a good vantage to the surrounding habitats. Shrubs are heavily used when available for both cover and food (CPW 2020e).	Potential	Yes	The Colorado Wildlife and Parks-mapped range is within the Proposed Action (CWP 2020e). Sharp-tailed grouse have been documented at F.E. Warren AFB and Camp Guernsey's North Training Range (eBird 2020; WYNDD 2020a; WYNDD 2021). They have also been documented within the vicinity of the Proposed Action in Colorado, Wyoming, and Nebraska; therefore, there is high potential for the plains sharp-tailed grouse to occur (CPW 2020e; Data Basin 2011; eBird 2020; WYNDD 2020a; WYNDD 2021).

Common Name	Scientific Name	Status				Expected Habitat	Likelihood of Occurrence	Documented Within Vicinity of Proposed Action	Justification
		USFWS [a]	State (WY) [b, c]	State (CO) [d, e]	State (NE) [f]				
Thick-billed longspur	*Rhynchophanes mccownii*	-	SGCN	-	PT	Shortgrass prairie with mixed grass, short-stature vegetation, and prairie dog colonies (NGPC 2012).	Potential	Yes	The breeding range overlaps the Proposed Action in all of Wyoming, the southwestern section of Nebraska, and western Weld County, Colorado (CLO 2020). Potential habitat exists within F.E. Warren AFB and Camp Guernsey (WYARNG 2020c; CEMML 2019). There are natural heritage occurrences and eBird observations within the vicinity of the Proposed Action (CNHP 2021; eBird 2020; NENHP 2020; WYNDD 2020a; WYNDD 2021). There is potential for thick-billed longspur to occur within the Proposed Action because of the overlapping range and proximity of species occurrences.
Whooping crane	*Grus americana*	E/CH	-	SE	SE	Open shallow wetlands such as braided rivers and kettle ponds, marshlands, mudflats, and alkaline lakes. Will also use open fields, recently harvested agriculture croplands and other open sparse grasslands that have little to no development (CWS and USFWS 2007).	Very Unlikely	No	Between 1975 and 1990, there was an experimental non-essential cross-fostering breeding program with sandhill cranes (*Antigone canadensis*) (CWS and USFWS 2007); the USFWS-mapped range for birds in this breeding program overlaps counties associated with the Proposed Action. There were four historic sightings of this experimental non-essential population from 1973 to 1982 in Weld County, CO, and Cheyenne County, WY (CWCTP 2020). There are no natural heritage occurrences or eBird observations of the protected population within the vicinity of the Proposed Action.
Fish									
Brassy minnow	*Hybognathus hankinsoni*	-	SGCN	ST	-	Low velocity areas within small streams including backwaters, pools, and beaver ponds, although they have also been found in large streams such as the Missouri River. They are generally found in locations with low turbidity, abundant woody debris, abundant submerged aquatic vegetation, organic sediment on top of gravel substrate, connectivity with other waters during dry months, permanent deep pools and backwaters, and an absence of large predatory fish (CPW 2020e; Scheurer and Fausch 2002; Steffensen et al. 2014; WGFD 2017a).	Potential	Yes	In Colorado, brassy minnows are found in the Lower South Platte River Basin and also in the backwaters of the Colorado River (CPW 2020e). Brassy minnows have also been found in Wyoming in the Niobrara, North Platte, and South Platte drainages (WGFD 2017a). In Nebraska, the species has been found in the Missouri, the Platte, and the Niobrara rivers (Steffensen et al. 2014). Brassy minnow has been found on Camp Guernsey in the North Platte River, Little Cottonwood Creek, and Patten Creek (WYARNG 2020c). Brassy minnow is also known to occur within the subbasins that overlap the F.E. Warren AFB missile field associated with the Proposed Action (CPW 2020e; WGFD 2017a).
Pallid sturgeon	*Scaphirhynchus albus*	E		SE	SE	Large, turbid rivers with moderate-to-high velocities, generally bottom-dwelling although found at water depths between 3 and 25 feet (PRRIP 2020; USFWS 2021c).	Very Unlikely	No	The USFWS-mapped range is not within the vicinity of the Proposed Action (USFWS 2020l). No natural heritage occurrences are documented in any county associated with the Proposed Action (CNHP 2021; NENHP 2020; WYNDD 2020a; WYNDD 2021). Pallid sturgeon are not expected to occur within the vicinity of the Proposed Action because of the project's distance from rivers within the species' range. No surface or groundwater withdrawals are associated with the project; therefore, no effects related to water withdrawals would occur.
Insects									
Monarch butterfly	*Danus plexippus*	C	-	-	SGCN	Occurs in temperate to tropical climates and is closely associated with large intact stands of milkweed (*Asclepias* spp.), their larval host plant (Pierce et al. 2014).	Potential	Yes	Because of their expansive range and the ubiquitous nature of monarch habitat (i.e., areas containing milkweed as breeding habitat, and areas containing wildflowers and other floral/nectar resources as foraging habitat), the species has the potential to be present throughout all portions of the Proposed Action. Monarch breeding habitat (i.e., milkweed stands) is more specific and likely less common throughout the missile field than their foraging habitat which consists of more generic butterfly-pollinated wildflowers and associated nectar resource (USFWS 2020f).

Common Name	Scientific Name	Status				Expected Habitat	Likelihood of Occurrence	Documented Within Vicinity of Proposed Action	Justification
		USFWS [a]	State (WY) [b, c]	State (CO) [d, e]	State (NE) [f]				
Regal fritillary	*Speyeria idalia*	SOC, Under Review	-	-	SGCN	The regal fritillary is primarily found in undisturbed high-quality native prairies and uses various violet (*Viola*) species as its host plant (Powell et al. 2006; Vaughan and Shepherd 2005). Limited information is available about the distribution of this species within its current range. In Nebraska, the core breeding populations are thought to occur in wet riparian habitat along the Platte River (Powell et al. 2006). However, that does not preclude the species from occurring in other native prairie habitats throughout the state and within the missile field. Suitable habitat for regal fritillaries is high-quality native prairie which retains much of the area's original ecosystem function and plant diversity. In these prairies, weeds and woody vegetation are minimal and native warm-season grasses (*Andropogon geradi, Panicum virgatum*) and forbs (*Echinacea* spp., *Rudbeckia* spp.) are common. Furthermore, regal fritillary rely on an abundance of host plant and various violet species (*Viola pedata, Viola pedatifida, Viola lanceolata*) as a natal food source to complete their life cycle. These violets are a common component of high-quality native prairie.	Potential	No	The primary remaining habitat for this species includes high-quality undisturbed prairies in the Great Plains region, which overlap the Proposed Action. The regal fritillary's range does not overlap F.E. Warren AFB but does overlap portions of the missile field and Camp Guernsey (USFWS 2020l; Vaughan and Shepherd 2005). The species is under a USWFS discretionary status review with an expected decision date in 2022.
Western bumble bee	*Bombus occidentalis*	SOC, Under Review	-	-	SGCN	Western bumble bees are generalist pollinators that can be found in a wide variety of habitats, including open grassy areas, prairie, urban parks and gardens, sagebrush steppe, mountain meadows, and alpine tundra (MTNHP 2021a; Williams et al. 2014). The species' primary habitat requirements include access to nectar and pollen resources, including native wildflowers, non-native weedy species, and bee-pollinated crops such as cranberries and almonds (Evans et al. 2008).	Potential	No	The western bumble bee's historic range overlaps F.E. Warren AFB, the majority of the missile field, and Camp Guernsey (Evans et al. 2008; Sheffield et al. 2016). Because of the relatively recent decline of the species is relatively recent, however, to date western bumble bee populations are not tracked by any natural heritage programs, state wildlife agencies, or USFWS. Limited information is available about precise localities of the distribution of this species in the vicinity of the missile field. Modelling data from Graves et al. (2020) indicates that, although the range of the western bumble bee overlaps F.E. Warren AFB, the majority of the missile field, and Camp Guernsey, the probability of this species occupying habitats in these areas is considered relatively low (under 10%) due to a variety of environmental factors The species is under a USWFS discretionary status review with an unknown decision date.

Common Name	Scientific Name	Status				Expected Habitat	Likelihood of Occurrence	Documented Within Vicinity of Proposed Action	Justification
		USFWS [a]	State (WY) [b, c]	State (CO) [d, e]	State (NE) [f]				
Plants									
Blowout penstemon	*Penstemon haydenii*	E	SOC	-	SE	Restricted to eroded depressions in sand caused by strong prevailing winds removing portions of the hills and leaving large conical depressions in the sand. The majority of the blowouts inhabited by this species occur in the sandhills region of Nebraska (USFWS 2021c).	Very Unlikely	No	The USFWS-mapped range overlaps one project county, Goshen County in Wyoming, but the range does not overlap the F.E. Warren portion of the Proposed Action (USFWS 2020l). No known occurrences of the species overlap the F.E. Warren Proposed Action (CHNP 2021; NENHP 2020; WYNDD 2020; WYNDD 2021). The nearest project features are 25 miles south and 24 miles east of the species' range.
Colorado butterfly plant	*Oenothera coloradensis* ssp. *coloradensis*	Delisted	SOC	-	SE	Prefers sub-irrigated, alluvial soils of drainage bottoms surrounded by mixed grass prairie between 4,500 and 6,500 feet. Frequently associated with species of *Carex* and *Scirpus* (CNHP 2019).	Potential	Yes	Occurs in riparian habitats along Crow Creek and Diamond Creek on F.E. Warren AFB (Air Force 2020f). There are documented Colorado butterfly plant natural heritage occurrences, as well as potential habitat, located throughout the missile field associated with the Proposed Action (NENHP 2020; CNHP 2021; WYNDD 2020a).
Ute ladies'-tresses	*Spiranthes diluvialis*	T	SOC	-	SGCN	Found in moist meadows associated with perennial streams and floodplains, also occurs alongside human-modified wetlands (Fertig et al. 2005).	Potential	Yes	The USFWS-mapped range occurs within the counties associated with the Proposed Action (USFWS 2020l). A known occurrence was reported in the vicinity of the F.E. Warren AFB missile field where it crosses an intermittent stream that is considered potential habitat for Ute ladies'-tresses (WYNDD 2020a; USGS 2019). There is potential for Ute ladies'-tresses to occur alongside some of the major riparian areas within the missile field associated with the Proposed Action (AFGSC 2020d).
Western prairie fringed orchid	*Platanthera praeclara*	T	-	-	SGCN	Found in moist tallgrass prairies and sedge meadows, riverine habitat downstream of Wyoming in the Platte River system. In Nebraska, the western prairie fringed orchid grows in wet to somewhat drier prairies in eastern portion of the state (NGPC 2020c).	Unlikely	No	No known occurrences overlap the Proposed Action or associated counties (CHNP 2021; NENHP 2020; WYNDD 2020a; WYNDD 2021). The western prairie fringed orchid is excluded from further analysis because of the lack of known, confirmed occurrences within the Proposed Action and that there would be no new water withdrawals to the Platte River system as a result of the proposed Project.

Definitions:

USFWS Status: T = Threatened, E = Endangered, CH = Critical Habitat, SOC = Species of Concern, XN = Experimental nonessential population.

State Status: ST = State Threatened, SE = State Endangered, PT = Proposed Threatened, SGCN = Species of Greatest Conservation Need (Wyoming Game and Fish Department), SOC = Species of Concern (Wyoming USFWS Ecological Field Office), SC = State Special Concern (Colorado Parks and Wildlife), SGCN = Species of Greatest Conservation Need (Nebraska Game and Parks)

Likelihood of Occurrence:

- Very Unlikely = Proposed Action not within species range and no species occurrence(s) near Proposed Action– species not analyzed in EIS,
- Unlikely = Based on species occurrence(s), not known or suspected to occur near Proposed Action and no potential habitat present within Proposed Action– species not analyzed in EIS,
- Potential = Potential habitat exists within Proposed Action and/or species occurrence(s) documented in close proximity to or overlapping the Proposed Action– species analyzed in EIS.

Sources:

[a] USFWS 2021e.

[b] USFWS 2020n.

[c] WYNDD 2020b.

[d] CPW 2020d.

[e] CNHP 2019.

[f] NDGF 2020c.

E.2.3 NOXIOUS WEEDS DOCUMENTED OR WITH POTENTIAL TO OCCUR ON MALMSTROM AFB AND MISSILE FIELD

Scientific Name [a] (Synonym)	Common Name [a]	Status [b]	Facility (State: County) [c]	
			Malmstrom AFB (MT: Cascade)	Missile Field (MT: Cascade, Chouteau, Fergus, Judith Basin, Lewis and Clark, Meagher, Teton, Wheatland)
Acroptilon repens (*Centaurea repens*)	Russian knapweed	Priority 2B	D	P
Alliaria petiolata	garlic mustard	County Listed: Lewis and Clark	N/A	P
Arctium minus	common burdock	County Listed: Lewis and Clark	N/A	P
Berteroa incana	hoary alyssum	Priority 2B	P	P
Bromus tectorum	cheatgrass	Priority 3 (Regulated Plant)	P	P
Cardaria draba (*Lepidium draba*)	whitetop; hoary cress	Priority 2B	D	P
Carduus nutans	musk thistle	County Listed: Lewis and Clark, Teton	N/A	P
Centaurea diffusa	diffuse knapweed	Priority 2B	P	P
Centaurea solstitialis	yellow starthistle	Priority 1A	-	P
Centaurea stoebe (*Centaurea maculosa*)	spotted knapweed	Priority 2B	D	P
Cirsium arvense	Canada thistle	Priority 2B	D	P
Conium maculatum	poison hemlock	County Listed: Chouteau	N/A	P
Convolvulus arvensis	field bindweed	Priority 2B	D	P
Cynoglossum officinale	houndstongue	Priority 2B	D	P
Elaeagnus angustifolia	Russian olive	Priority 3 (Regulated Plant)	P	P
Euphorbia esula	leafy spurge	Priority 2B	D	P
Hieracium aurantiacum	orange hawkweed	Priority 2A	-	P
Hieracium caespitosum, H. x floribundum	meadow hawkweed	Priority 2A	P	P
Hyosocamus niger	black henbane	County Listed: Lewis and Clark	N/A	P
Hypericum perforatum	common St Johnswort	Priority 2B	P	P
Iris pseudacorus	yellow flag iris	Priority 2A	-	P
Isatis tinctoria	Dyer's woad	Priority 1A	-	P
Lepidium latifolium	perennial pepperweed	Priority 2A	P	P
Leucanthemum vulgare (*Chrysanthemum leucanthemum*)	oxeye daisy	Priority 2B	P	P
Linaria dalmatica	Dalmatian toadflax	Priority 2B	D	P
Linaria vulgaris	yellow toadflax	Priority 2B	P	P
Lythrum salicaria, L. virgatum	purple loosestrife	Priority 1B	P	P
Myriophyllum spicatum	Eurasian watermilfoil	Priority 2A	P	P
Phragmites australis	common reed	Priority 1A	P	P
Polygonum cuspidatum (*Fallopia japonica*)	Japanese knotweed	Priority 1B	P	P
Polygonum sachalinense (*Fallopia sachalinense*)	giant knotweed	Priority 1B	-	P
Polygonum x bohemicum	bohemian knotweed	Priority 1B	-	P

Scientific Name [a] (Synonym)	Common Name [a]	Status [b]	Facility (State: County) [c]	
			Malmstrom AFB (MT: Cascade)	Missile Field (MT: Cascade, Chouteau, Fergus, Judith Basin, Lewis and Clark, Meagher, Teton, Wheatland)
Potamogeton crispus	curlyleaf pondweed	Priority 2B	P	P
Potentilla recta	sulfur cinquefoil	Priority 2B	P	P
Ranunculus acris	tall buttercup	Priority 2A	-	P
Reseda lutea	yellow mignonette	County Listed: Judith Basin	N/A	P
Rhamnus cathartica	common buckthorn	Priority 2A	P	P
Senecio jacobaea	tansy ragwort	Priority 2A	-	P
Tamarix spp.	saltcedar, tamarisk	Priority 2B	-	P
Tanacetum vulgare	common tansy	Priority 2B	P	P
Tripleurospermum inodorum	scentless chamomile	County Listed: Chouteau	N/A	P
Ventenata dubia	ventenata	Priority 2A	P	P
Verbascum thapsus	common mullein	County Listed: Lewis and Clark	N/A	P

[a] Only state or county listed noxious weeds documented or with potential to occur in one or more of the counties where proposed Project activities would occur are included in table.

[b] Status definitions based on Montana Department of Agriculture (MDA) 2019.

Priority 1A: These weeds are not present or have a very limited presence in Montana. Management criteria require eradication if detected, education, and prevention.

Priority 1B: These weeds have limited presence in Montana. Management criteria require eradication or containment and education.

Priority 2A: These weeds are common in isolated areas of Montana. Management criteria will require eradication or containment where less abundant. Management shall be prioritized by local weed districts.

Priority 2B: These weeds are abundant in Montana and widespread in many counties. Management criteria will require eradication or containment where less abundant. Management shall be prioritized by local weed districts.

Priority 3: Regulated Plants (**Not Montana Listed Noxious Weeds**). These regulated plants have the potential to have significant negative impacts. The plant may not be intentionally spread or sold other than as a contaminant in agricultural products. The state recommends research, education and prevention to minimize the spread of the regulated plant.

County Listed: In addition to state listed noxious weeds, which are considered noxious weeds in the entire state, each county in Montana may declare additional species as noxious weeds in that county.

[c] **D** = Documented occurrence (per Air Force 2018b)

P = Potential to occur. A species is listed as having the potential to occur if there is a documented occurrence of that species in one or more of the counties where proposed Project activities would occur (per EDDMapS 2020; MTNHP 2020b; USDA NRCS 2020).

N/A = Species not listed as a noxious weed in the county or counties where proposed Project activities would occur.

"-" = Species is listed in the county or counties where proposed Project activities would occur, but species has not been documented as occurring in the county where proposed Project activities would occur (per EDDMapS 2020; MTNHP 2020b; USDA NRCS 2020).

E.2.4 FEDERALLY AND STATE-LISTED SPECIES CONSIDERED FOR MALMSTROM AFB AND MISSILE FIELD

Common Name	Scientific Name	Status		Expected Habitat	Likelihood of Occurrence	Documented Within Vicinity of Proposed Action [c, d]	Justification
		USFWS [a]	State [b] (MT)				
Mammals							
Black-footed ferret	*Mustela nigripes*	E/XN	SOC	Closely tied to prairie dogs throughout their range and have only been found in association with prairie dogs. They are therefore limited to the same open habitat used by prairie dogs: grasslands, steppe, and shrub steppe (MTNHP 2020a).	Very Unlikely	No	The USFWS-mapped range is not within the counties associated with the Proposed Action (USFWS 2020l). There also are no natural heritage occurrences within the counties associated with the Proposed Action (MTNHP 2021b). The only known occurrences of black-footed ferret are within reintroduction sites, therefore it is very unlikely for the species to be within the vicinity of the Proposed Action.
Canada lynx	*Lynx canadensis*	T/CH	SOC	Generally found in mid-elevation moist subalpine mixed-conifer forests in Montana with relatively uniform and moderately deep snowfall amounts (total annual snowfall of 39 to 50 inches) (MTNHP 2020a; USFWS 2017a).	Potential	Yes	The USFWS-mapped range overlaps all counties associated with the Proposed Action (USFWS 2020l). Forested habitat that may support lynx is absent from the Malmstrom AFB and limited within its missile field (USGS 2016). The Proposed Action crosses Canada lynx linkage areas in Judith Basin, Fergus, and Meagher counties (USFS 2003). Lynx USFWS-designated critical habitat is crossed by the Proposed Action in Lewis and Clark County, MT, where many natural heritage occurrences have been recorded (USFWS 2020l; MTNHP 2021b). The species was not detected at 25 LF sites within the missile field during surveys conducted in 2017-2018 (Jordan and Melton 2019). There is potential for Canada lynx to use forested habitats associated with the Proposed Action.
Grizzly bear	*Ursus arctos*	T/PCH	SOC	Primarily use meadows, seeps, riparian zones, mixed shrub fields, closed timber, open timber, sidehill parks, snow chutes, and alpine slab rock habitats. Habitat use is highly variable between areas, seasons, local populations, and individuals (MTNHP 2020a).	Potential	Yes	The USFWS-mapped range and a portion of the Northern Continental Divide Ecosystem (NCDE) overlaps the western portion of the missile field associated with the Proposed Action in Teton and Lewis and Clark counties (USFWS 1993; USFWS 2018c; USFWS 2020l). The species' range has expanded outside the NCDE boundaries to the east, toward Great Falls, MT, making it likely for the species to travel through the western part of the missile field that is associated with the Proposed Action (USFWS 2018c). The species was documented in 2018 at two LFs in Teton County, MT (Jordan and Melton 2019). Grizzly bear occurrences were confirmed in 2021 on private property in Fergus County, MT, and 15 miles directly southeast of the Proposed Action in Lewiston, MT (Associated Press 2021; USFWS 2020l). Natural heritage occurrences from 2018 overlap the western portion of the Proposed Action; therefore, grizzly bear are considered documented within the Proposed Action (MTNHP 2021b).
Little brown bat	*Myotis lucifugus*	SOC, Under Review	SOC	In the west, mainly in mountainous and riparian areas in a wide variety of forest habitats; from tree-lined xeric-scrub to aspen meadows and Pacific Northwest coniferous rain forests. This species is closely associated with humans, often forming nursery colonies containing hundreds, sometimes thousands of individuals in buildings, bridges, attics, and other artificial structures (BCI 2020).	Potential	Yes	Approximate range extends throughout the state of Montana (BCI 2020), with documented observations within the vicinity of the Proposed Action (MTNHP 2021b). Forested habitats and artificial structures (buildings and bridges) could provide habitat for little brown bat that have been documented within the vicinity of the Proposed Action (FHWA 2020; MTNHP 2021b; USGS 2016). The species is under a USWFS discretionary status review, with an expected decision in late 2022.

Common Name	Scientific Name	Status		Expected Habitat	Likelihood of Occurrence	Documented Within Vicinity of Proposed Action [c, d]	Justification
		USFWS [a]	State [b] (MT)				
Northern long-eared bat	*Myotis septentrionalis*	T with 4(d) rule	SOC	Suitable summer habitat consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields, and pastures. Individual trees may be considered suitable habitat when they exhibit characteristics of suitable roost trees (i.e., live trees and/or snags ≥ 3 inches diameter at breast height that have exfoliating bark, cracks, crevices, and/or cavities) and are within 1,000 feet of other forested/wooded habitat. This species has also been observed roosting in human-made structures such as buildings, barns, bridges, and bat houses during summer (USFWS 2014c).	Very unlikely	No	The USFWS-mapped range is not within the vicinity of the Proposed Action (USFWS 2020l) and there are no documented observations within any of the project counties (MTNHP 2021b). The nearest USFWS range is Garfield County, MT which is 40 miles east of the Proposed action.
Birds							
Piping plover	*Charadrius melodus*	T/CH	SOC	This species primarily selects unvegetated sand or pebble beaches on shorelines or islands in freshwater and saline wetlands. Vegetation, if present at all, consists of sparse, scattered clumps. Nesting can occur on shorelines of alkali wetlands, lakes, reservoirs, and rivers. Open shorelines and sandbars of rivers and large reservoirs in the eastern and north-central portions of the state provide prime breeding habitat (MTNHP 2020a).	Potential	Yes	The USFWS-mapped range is not within the vicinity of the Proposed Action (USFWS 2020l). The breeding areas in the state are located to the north of the project on the Canada border, therefore piping plover are unlikely to use areas associated with the Proposed Action for breeding (MTNHP 2021b; USFWS 2019d; USGS 2019). Four piping plover sightings have been documented during fall migration within the missile field, primarily at Benton Lake NWR and Freezout Lake WMA in Cascade County and Teton County, respectively (eBird 2020; MTNHP 2021b). In addition, there was one fall migratory occurrence documented in Great Falls, near Interstate-15 and the Missouri River (MTNHP 2021b).
Red knot	*Calidris canutus rufa*	T	SSS	Large open freshwater wetlands are used as stopover habitat during spring and fall migration (MTNHP 2021a).	Potential	Yes	The USFWS-mapped range overlaps the Proposed Action (USFWS 2020l). Red knots have been documented within the Malmstrom AFB missile field during their spring and fall migration (eBird 2020; MTNHP 2021b). There are two migratory stopover areas within the missile field including Benton Lake NWR and Freezout Lake WMA in Cascade County and Teton County, respectively (MTNHP 2021b).
Yellow-billed cuckoo	*Coccyzus americanus*	T/PCH	SOC	Breeding and migratory habitat includes open woodlands (especially where undergrowth is thick), parks, and deciduous riparian woodlands. In the West, they nest in tall cottonwood and willow riparian woodlands (MTNHP 2020a).	Very Unlikely	No	The USFWS-mapped range is not within the vicinity of the Proposed Action (USFWS 2020l). There are no known or expected occurrences of this species within the counties associated with the Proposed Action (USFWS 2021e). The yellow-billed cuckoo has not been recorded in this portion of Montana since and, therefore, is unlikely to occur in the vicinity of the Proposed Action.

Common Name	Scientific Name	Status		Expected Habitat	Likelihood of Occurrence	Documented Within Vicinity of Proposed Action [c, d]	Justification
		USFWS [a]	State [b] (MT)				
Fish							
Bull trout	*Salvelinus confluentus*	T/CH	SOC	Resident fish usually spend their entire lives in smaller tributaries and headwater streams. Migratory fish spawn and their progeny rear for one to several years in tributary streams before migrating downstream to larger rivers or lakes where they mature and spend most of their adult life (MTNHP 2020a).	Potential	Yes	The USFWS-mapped range for bull trout includes a reach of the Blackfoot River that is approximately 0.1 miles from the proposed utility corridor (USFWS 2020l). One natural heritage occurrence in the Blackfoot River is within approximately 0.2 miles of the same proposed utility corridor (MTNHP 2021b). The species is considered potential because there are species occurrences documented in close proximity to the Proposed Action.
Pallid sturgeon	*Scaphirhynchus albus*	E	SOC	Large, turbid rivers with sand and gravel substrate, typically in high velocities; also impoundments of these rivers. In Montana, they can be found in the Missouri and Yellowstone rivers (MTNHP 2020a).	Very Unlikely	No	This closest known species' range and natural heritage occurrences are to the east and north in the Missouri River in Chouteau and Fergus counties and more than 5 miles from the project; therefore, it is very unlikely for pallid sturgeon to occur within the vicinity of the Proposed Action (MTNHP 2021b). There would be no new water withdrawals to the Platte River system as a result of the proposed Project.
Conifers							
Whitebark pine	*Pinus albicaulis*	PT	SOC	Whitepark pine occurs sporadically in mid-elevation forests, is common in subalpine forests, and high elevation treeline communities. In Montana, the species is usually found between 5,900- and 9,300-feet elevation (Fryer 2002).	Potential	Yes	Whitebark pine does not occur at the Malmstrom AFB but could occur at a few higher elevation locations within the missile field. USFWS range and natural heritage occurrences overlap the Proposed Action in the Little Belt Mountains (Cascade, Judith Basin, and Meagher counties) in the south-central section of the missile field and also in Lewis and Clark County in the western missile field (MTNHP 2021b; USFWS 2020l). Preliminary field surveys along proposed utility corridors did not observe the species (AFGSC 2020e), although potential habitat (including the area within known occurrences) within the Proposed Action has not been fully surveyed. Due to the presence of whitebark pine within the vicinity of the Proposed Action there is potential for the species to occur.
Insects							
Monarch butterfly	*Danus plexippus*	C	-	Occurs in temperate to tropical climates and is closely associated with large intact stands of milkweed (*Asclepias* spp.), their larval host plant (Pierce et al. 2014).	Potential	No	Because of their expansive range and the ubiquitous nature of monarch habitat (i.e., areas containing milkweed as breeding habitat, and areas containing wildflowers and other floral/nectar resources as foraging habitat), the species has the potential to be present throughout all portions of the Proposed Action. Monarch breeding habitat (i.e., milkweed stands) is more specific and likely less common throughout the missile field than their foraging habitat which consists of more generic butterfly-pollinated wildflowers and associated nectar resource (USFWS 2020f).
Regal fritillary	*Speyeria idalia*	SOC, Under Review	-	Habitat includes tall-grass prairie and other open sites including damp meadows, marshes, wet fields, and mountain pastures (BAMONA 2020).	Unlikely	No	The regal fritillary range does not overlap the Proposed Action (USFWS 2020l). The species is under a USWFS discretionary status review with an expe2cted decision date in 2022.

Common Name	Scientific Name	Status		Expected Habitat	Likelihood of Occurrence	Documented Within Vicinity of Proposed Action [c, d]	Justification
		USFWS [a]	State [b] (MT)				
Western bumble bee	*Bombus occidentalis*	SOC, Under Review	-	Western bumble bees are generalist pollinators that can be found in a wide variety of habitats, including open grassy areas, prairie, urban parks and gardens, sagebrush steppe, mountain meadows, and alpine tundra (MTNHP 2021a; Williams et al. 2014). The species' primary habitat requirements include access to nectar and pollen resources, including native wildflowers, non-native weedy species, and bee-pollinated crops such as cranberries and almonds (Evans et al. 2008).	Potential	Yes	In Montana, observations of western bumble bee are actively tracked by MTNHP. The species has not been observed within one half-mile of Malmstrom AFB or the MAFs or LFs. The species has, however, been observed near (i.e., within one-half mile of) the proposed utility corridors in Cascade, Judith Basin, and Meagher counites (MTNHP 2021b). Because of western bumble bee habitat ubiquity throughout the project area and the fact that colonies disband and reform on a yearly basis, these records are likely an underestimate of the species' potential occurrence within Malmstrom AFB and the missile field. Graves et al. (2020) modelled the probability of western bumble bee occupancy throughout the western United States. Based on data from Graves et al. (2020), the majority of the Malmstrom missile field has a low probability of being occupied by western bumble bee; however, portions of the proposed utility corridor in Cascade, Meagher, Judith Basin, and Chouteau counties have an increased probability of western bumble bee occupancy (Graves et al. 2020). The species is under a USWFS discretionary status review with an unknown decision date.

Definitions:

USFWS Status: T = Threatened, E = Endangered, PT = Proposed Threatened, C = Candidate, XN = Experimental Nonessential, CH = Critical Habitat, PCH = Proposed Critical Habitat, SOC = Species of Concern.

State of Montana Status: SOC = Species of Concern, SSS = Special Status Species.

Likelihood of Occurrence:

- Very Unlikely = Proposed Action not within species range and no species occurrence(s) near Proposed Action– species not analyzed in EIS,
- Unlikely = Based on species occurrence(s), not known or suspected to occur near Proposed Action and no potential habitat present within Proposed Action– species not analyzed in EIS,
- Potential = Potential habitat exists within Proposed Action and/or species occurrence(s) documented in close proximity to or overlaps the Proposed Action– species analyzed in EIS.

Sources:

[a] USFWS 2021e.

[b] MTNHP 2020a.

[c] MTNHP 2021b.

[d] Jordan and Melton 2019.

E.2.5 NOXIOUS WEEDS DOCUMENTED OR WITH POTENTIAL TO OCCUR ON MINOT AFB AND MISSILE FIELD

Scientific Name [a] (Synonym)	Common Name [a]	Status [b]	Facility (State: County) [c]	
			Minot AFB (ND: Ward)	Missile Field (ND: Bottineau, Burke, McHenry, McLean, Mountrail, Renville, Ward)
Acroptilon repens (*Centaurea repens*)	Russian knapweed	State Listed	P	P
Arctium minus	common burdock	County Listed: Burke	N/A	P
Artemisia absinthium	absinth wormwood	State Listed	D	P
Asclepias syriaca	common milkweed	County Listed: Renville	-	P
Carduus nutans	musk thistle	State Listed	P	P
Centaurea stoebe (*Centaurea maculosa*)	spotted knapweed	State Listed	P	P
Cirsium arvense	Canada thistle	State Listed	D	P
Cynoglossum officinale	houndstongue	State Listed	-	P
Euphorbia esula	leafy spurge	State Listed	D	P
Linaria vulgaris	yellow toadflax	State Listed	P	P
Lythrum salicaria, L. virgatum, all cultivars	purple loosestrife	State Listed	D	P
Tamarix spp.	saltcedar, tamarisk	State Listed	-	P
Tanacetum vulgare	common tansy	County Listed: Burke, Mountrail	N/A	P
Tripleurospermum inodorum	mayweed, false chamomile	County Listed: Ward	P	P

[a] Only state or county listed noxious weeds documented or with potential to occur in one or more of the counties where proposed Project actives would occur are included in table.

[b] **State Listed:** A species is listed as a noxious weed for the entire State of North Dakota. North Dakota does not divide state listed noxious weeds into separate lists or priorities for control.
County Listed: In addition to state listed noxious weeds, each county in the State of North Dakota may designate additional species as noxious weeds in that county.

[c] **D** = Documented occurrences (per Air Force 2020d)
P = Potential to occur. A species is listed as having the potential to occur if there is a documented occurrence of that species in one or more of the counties where proposed Project activities would occur (per EDDMapS 2020; USDA NRCS 2020).
N/A = Species not listed as a noxious weed in the county or counties where proposed Project activities would occur.
"-" = Species is listed as a noxious weed in the county or counties where proposed Project activities would occur, but species has not been documented in the county or counties where proposed Project activities would occur (per EDDMapS 2020; USDA NRCS 2020).

E.2.6 FEDERALLY AND STATE-LISTED SPECIES CONSIDERED FOR MINOT AFB AND MISSILE FIELD

Common Name	Scientific Name	Status		Expected Habitat	Likelihood of Occurrence	Documented Within Vicinity of Proposed Action [c]	Justification
		USFWS[a]	State[b] (ND)				
Mammals							
Little brown bat	*Myotis lucif,ugus*	SOC, Under Review	SCP-Level I	In the west, this species is found mainly in mountainous and riparian areas in a wide variety of forest habitats; from tree-lined xeric-scrub to aspen meadows and Pacific Northwest coniferous rain forests. This species is closely associated with humans, forming nursery colonies in buildings, attics, and other artificial structures (BCI 2020).	Potential	Yes	Approximate range extends throughout the state of North Dakota (BCI 2020). The species was detected during acoustic monitoring surveys at Minot AFB and uses forests, as well as artificial structures (buildings and bridges), found within the Proposed Action (CIRE 2017; Carver n.d.; FHWA 2020; USGS 2016). The species is under a USWFS discretionary status review, with an expected decision in late 2022.
Northern long-eared bat	*Myotis septentrionalis*	T with 4(d) rule	SCP-Level I	Suitable summer habitat consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed nonforested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields, and pastures. Individual trees may be considered suitable habitat when they are live and/or snags ≥ 3 inches diameter at breast height that have exfoliating bark, cracks, crevices, and/or cavities, and the individual trees must be within 1,000 feet of other forested/wooded habitat. This species has also been observed roosting in artificial structures such as buildings, barns, bridges, and bat houses during summer (USFWS 2014c).	Potential	Yes	The USFWS-mapped range overlaps all counties associated with the Proposed Action (USFWS 2020l), although there are no recorded natural heritage occurrences within the vicinity of the Proposed Action (NDNHI 2020). The northern long-eared bat has only been identified in only a few locations in North Dakota: forested habitat in the Turtle Mountains (northeast of the Proposed Action), riparian corridors of the Little Missouri River (southwest of the Proposed Action), and the Missouri River (south and west of the Proposed Action). Because of the species' sensitive nature, exact locations of their observations are not published (NDGF 2020c). The bats were not detected on Minot AFB during surveys conducted in 2016 (CIRE 2017) or 2019 (Carver n.d.). This species is not expected to occur at Minot AFB but has potential to occur within the missile field associated with the Proposed Action due to presence of suitable habitat (i.e., forests and bridges) and observations in adjacent counties (Nelson et al. 2015; NDNHI 2020).
Birds							
Least tern	*Sterna antillarum*	Delisted	SCP-Level II	Uses sparsely vegetated sandbars or shoreline salt flats of lakes along the Missouri River system in North Dakota. The Yellowstone River, Missouri River, Lake Sakakawea, and Lake Oahe are the only areas in the state where they reside (NDGF 2020c).	Unlikely	No	The USFWS-mapped range occurs within Mountrail and McLean counties (USFWS 2020l), species natural heritage occurrences and eBird observations are only recorded along the Missouri River and its reservoirs, south of the Proposed Action; therefore, it is unlikely for least tern to occur (NDNHI 2020; eBird 2020). There would be no new water withdrawals to the Platte River system as a result of the proposed Project.
Piping plover	*Charadrius melodus*	T/CH	SCP-Level II	Piping plover breeding habitat consists of sandy upper beaches, especially where scattered grass tufts are present, and on sparsely vegetated shores and islands of shallow lakes, ponds, rivers, and impoundments (NatureServe 2020).	Potential	Yes	The USFWS-mapped critical habitat is within the vicinity of the Proposed Action in Burke, McLean, Mountrail, Renville, and Ward counties (USFWS 2020l). Piping plover eBird observations and natural heritage occurrences have been recorded within the vicinity of the Proposed Action (eBird 2020; NDNHI 2020). There is potential for piping plover to occur within the vicinity of the Proposed Action based on the overlapping critical habitat and occurrences.

Common Name	Scientific Name	Status		Expected Habitat	Likelihood of Occurrence	Documented Within Vicinity of Proposed Action [c]	Justification
		USFWS[a]	State[b] (ND)				
Red knot	*Calidris canutus rufa*	T	SCP-Level III	Migrant species only, breeds in the Arctic. In North Dakota, both alkaline and freshwater lakes have been used during migration in mid-May and mid-September to October (NDGF 2020c).	Potential	No	The USFWS-mapped range occurs within all but Bottineau County (USFWS 2020l). A single eBird observation was recorded in upper McHenry County and one in southwest Sheridan County (eBird 2020); both locations are on opposite sides of the county where the Proposed Action are located. No natural heritage species occurrences have been reported within any of the counties the Proposed Action crosses (NDNHI 2020). There are open water habitats mapped within close proximity that could be used as stopover locations during migration, therefore there is potential for red knot to occur within the vicinity of the Proposed Action (USGS 2016).
Whooping crane	*Grus americana*	E/CH	SCP-Level III	Breeding sites only at Wood Buffalo National Park in Alberta, Canada and wintering sites within and near Aransas National Wildlife Refuge on the Gulf Coast of Texas (NGPC 2020a). Migratory stopover habitat includes large open shallow wetlands used for roosting and smaller ponds and open agricultural fields for foraging (NDGF 2020c).	Potential	Yes	The Minot AFB and missile field overlaps the central portion of the Central Flyway (USFWS 2020b), which the whooping crane uses to migrate between their sole breeding grounds and wintering grounds (NGPC 2020a). There is high-quality whooping crane migration habitat modeled throughout much of the Minot AFB and missile field (USFWS 2018e), though these areas are not within mapped designated critical habitat and no designated critical habitat overlaps the AFB or missile field (USFWS 2021f). There have been many eBird observations, natural heritage occurrences, and Cooperative Whooping Crane Tracking Project sightings throughout the missile field and the Minot AFB during spring and fall migration; with the highest numbers recorded during early to mid-April and in late October through early November (eBird 2020; NDNHI 2020; CWCTP 2020). The whooping crane has potential to occur within the vicinity of the Proposed Action based on the proximity to the Central Flyway and species' occurrences.

Common Name	Scientific Name	Status		Expected Habitat	Likelihood of Occurrence	Documented Within Vicinity of Proposed Action [c]	Justification
		USFWS[a]	State[b] (ND)				
Fish							
Pallid sturgeon	*Scaphirhynchus albus*	E	SCP-Level II	In North Dakota, mostly found in the Missouri River upstream of Lake Sakakawea and in the Yellowstone River near its confluence with the Missouri. Generally found in high velocity, turbid reaches at varying depths (NDGF 2020c; USFWS 2014d).	Unlikely	Yes	The closest potential pallid sturgeon habitat to the project is a backwater of Lake Sakakawea, on the Missouri River, approximately 0.3 miles from a proposed utility corridor. However, it is not certain if the pallid sturgeon is present in Lake Sakakawea. While the USFWS-mapped range for pallid sturgeon includes Lake Sakakawea, the Revised Recovery Plan for Pallid Sturgeon excludes Lake Sakakawea from pallid sturgeon contemporary range (USFWS 2014d; USFWS 2020l. North Dakota Game and Fish indicates the pallid sturgeon is mostly found in the Missouri River upstream of Lake Sakakawea, and in the Yellowstone River near its confluence with the Missouri (NDGF 2020c). Six North Dakota Natural Heritage occurrences exist in lake Sakakawea, yet the most recent occurrence is from 1980 and occurrences are one mile or more from project elements (NDNHI 2020). Pallid sturgeon preferred habitat is large, turbid rivers with moderate to high velocities (NDGF 2020c; USFWS 2014d; USFWS 2020l). Likelihood of occurrence is considered unlikely because the closest known occurrences were documented in 1980 and are 1 mile or more from project elements and most sources reviewed indicated that pallid sturgeon are not likely present in Lake Sakakawea (NDNHI 2020; NDGF 2020c; USFWS 2014d). In addition, pallid sturgeon prefer riverine habitats, so are unlikely to occupy Lake Sakakawea. There would be no new water withdrawals to the Platte River system as a result of the proposed Project.
Insects							
Dakota skipper	*Hesperia dacotae*	T/CH	-	Prefers two main types of prairies; low-lying, wet-mesic bluestem prairies with little topographic relief and prairies with a high diversity and abundance of native forbs that are relatively dry and often found on ridges and hillsides (USFWS 2014a).	Potential	Yes	The USFWS-mapped range overlaps most of the Minot AFB and missile field (USFWS 2020l), though preliminary habitat surveys within the missile field, particularly along the proposed utility corridor, indicate little potential habitat for Dakota skippers (AFGSC 2020c). The USFWS has designated critical habitat for this species in McHenry County (USFWS 2020l); however, the designated critical habitat does not overlap the Minot AFB or missile field. While the species has not been documented at Minot AFB, there is potential to occupy remnant prairie patches on-base as a transient (Air Force 2014b). A natural heritage species occurrence has been documented about 5 miles west of Minot AFB in Ward County and multiple occurrences overlap the Proposed Action (NDNHI 2020). Dakota skipper could occur within the Proposed Action based on the overlapping species' range and proximity of the occurrences.
Monarch butterfly	*Danaus plexippus*	C	SCP-Level I	Occurs in temperate to tropical climates and is closely associated with large intact stands of milkweed (*Asclepias* spp.), their larval host plant (Pierce et al. 2014).	Potential	No	Due to their expansive range and the ubiquitous nature of monarch habitat (milkweed stands and floral/nectar resources), the species has the potential to be present within the vicinity of both the Proposed Action, as milkweed is known to occur along roads and the species can be found throughout North Dakota (GBIF 2019; NDGF 2020c).

Common Name	Scientific Name	Status		Expected Habitat	Likelihood of Occurrence	Documented Within Vicinity of Proposed Action [c]	Justification
		USFWS[a]	State[b] (ND)				
Regal fritillary	*Speyeria idalia*	SOC, Under Review	SCP-Level I	Habitat includes tall-grass prairie and other open sites including damp meadows, marshes, wet fields, and mountain pastures (BAMONA 2020).	Potential	No	The USFWS-mapped range overlaps the Proposed Action (USFWS 2020l; Vaughan and Shepherd 2005). Regal fritillary habitat in North Dakota is essentially synonymous with Dakota skipper habitat because both species are endemic to high-quality native prairies. Mixed-grass prairie habitat is mapped within the Proposed Action (USGS 2016). While no known populations or known occurrences of this species overlap any project elements, the species is not fully tracked by any natural heritage programs, state wildlife agencies, or USFWS. There is one verified recent record of species for the state in 2013 near Bismarck, North Dakota (BAMONA 2020). Regal fritillary could occur within the Proposed Action based on the overlapping species' range and availability of habitat within the Proposed Action. The species is under a USWFS discretionary status review with an expected decision date in 2022.
Western bumble bee	*Bombus occidentalis*	SOC, Under Review	-	Western bumble bees are generalist pollinators that can be found in a wide variety of habitats, including open grassy areas, prairie, urban parks and gardens, sagebrush steppe, mountain meadows, and alpine tundra (MTNHP 2021a; Williams et al. 2014). The species' primary habitat requirements include access to nectar and pollen resources, including native wildflowers, non-native weedy species, and bee-pollinated crops such as cranberries and almonds (Evans et al. 2008).	Unlikely	Yes	While the western bumble bee's historic range potentially overlapped the Minot AFB and the associated missile field (Evans et al. 2008; Sheffield et al. 2016), recent species distribution models indicate that western bumble bee are unlikely to occur at the Minot AFB or missile field due to various environmental factors including land cover and climate (Graves et al. 2020; Sheffield et al. 2016). The species is under a USWFS discretionary status review with an unknown decision date.

Definitions:

USFWS Status: T = Threatened, E = Endangered, CH = Critical Habitat, 4(d) rule = rule in Endangered Species Act that permits incidental take of the species in states where white-nose syndrome is not present, SOC = Species of Concern.

North Dakota State Status: SCP = Species of Conservation Priority, Level I = high level of conservation priority because of declining status either in North Dakota or across their range or high rate of occurrence in North Dakota constituting the core of the species breeding range but are at-risk range wide, Level II = moderate level of conservation priority or high level of conservation priority but a substantial level of non-state wildlife grant funding is available to them, Level III = species having a moderate level of conservation priority but are believed to be peripheral or non-breeding in North Dakota.

Likelihood of Occurrence:

- Very Unlikely = Proposed Action not within species range and no species occurrence(s) near Proposed Action – species not analyzed in EIS,
- Unlikely = Based on species occurrence(s), not known or suspected to occur near Proposed Action and no potential habitat present within Proposed Action– species not analyzed in EIS,
- Potential = Potential habitat exists within Proposed Action and/or species occurrence(s) documented in close proximity to or overlaps the Proposed Action– species analyzed in EIS.

Sources:

[a] USFWS 2021e.

[b] NDGF 2020b.

[c] NDNHI 2020.

E.2.7 NOXIOUS WEEDS DOCUMENTED OR WITH POTENTIAL TO OCCUR ON HILL AFB OR UTTR

Scientific Name [a] (Synonym)	Common Name [a]	Status [b]	Facility (State: County) [c]	
			Hill AFB (UT: Davis, Weber)	UTTR (UT: Box Elder, Tooele)
Acroptilon repens (*Centaurea repens*)	Russian knapweed	Class 3	D	P
Aegilops cylindrica	jointed goatgrass	Class 3	D	P
Alliaria petiolata	garlic mustard	Class 1B	P	-
Arundo donax	giant reed	Class 1B	P	-
Brassica elongata	elongated mustard	Class 1B	-	P
Cardaria spp.	whitetop; hoary cress	Class 3	D	P
Carduus acanthoides	plumeless thistle	Class 1A	D	-
Carduus nutans	musk thistle	Class 3	D	P
Centaurea diffusa	diffuse knapweed	Class 2	D	P
Centaurea solstitialis	yellow starthistle	Class 2	D	P
Centaurea stoebe (*Centaurea maculosa*)	spotted knapweed	Class 2	D	P
Centaurea virgata	squarrose knapweed	Class 2	D	P
Chondrilla juncea	rush skeletonweed	Class 2	D	P
Cirsium arvense	Canada thistle	Class 3	D	P
Conium maculatum	poison hemlock	Class 3	D	P
Convolvulus arvensis	field bindweed	Class 3	D	P
Cynodon dactylon	bermudagrass	Class 3	D	P
Cynoglossum officinale	houndstongue	Class 3	D	P
Cytisus scoparius	Scotch broom	Class 4	P	-
Elaeagnus angustifolia	Russian olive	Class 4	D	P
Elymus repens (*Agropyron repens*)	quackgrass	Class 3	D	P
Euphorbia esula	leafy spurge	Class 2	D	P
Euphorbia myrsinites	myrtle spurge	Class 4	P	P
Galega officinalis	goatsrue	Class 1B	D	P
Hyosocamus niger	black henbane	Class 2	D	P
Hypericum perforatum	common St Johnswort	Class 1B	D	P
Isatis tinctoria	Dyer's woad	Class 2	D	P
Lepidium latifolium	perennial pepperweed	Class 3	D	P
Leucanthemum vulgare (*Chrysanthemum leucanthemum*)	oxeye daisy	Class 1B	P	P
Linaria dalmatica	Dalmatian toadflax	Class 2	D	P
Linaria vulgaris	yellow toadflax	Class 2	D	P
Lythrum salicaria	purple loosestrife	Class 2	D	P
Onopordum acanthium	Scotch thistle	Class 3	D	P

Scientific Name [a] (Synonym)	Common Name [a]	Status [b]	Facility (State: County) [c]	
			Hill AFB (UT: Davis, Weber)	UTTR (UT: Box Elder, Tooele)
Phragmites australis	common reed	Class 3	P	P
Polygonum cuspidatum (*Fallopia japonica*)	Japanese knotweed	Class 1B	P	P
Scorzonera laciniata	cutleaf vipergrass	Class 1B	P	P
Sorghum halepense	Johnsongrass	Class 3	D	P
Taeniatherum caput-medusae	medusahead	Class 2	D	P
Tamarix ramosissima	saltcedar, tamarisk	Class 3	D	D
Tribulus terrestris	puncturevine	Class 3	D	P
Ventenata dubia	ventenata	Class 1A	P	P
Zygophyllum fabago	Syrian beancaper	Class 1A	P	P

[a] Only state listed noxious weeds documented or with potential to occur in one or more of the counties where proposed Project activities would occur are included in table. List of species does not include all species listed as noxious weeds in Utah.

[b] Noxious weed status definitions per UDAF 2019.

Class 1A: Early Detection Rapid Response (EDDR Watch List) = Declared noxious and invasive weeds not native to the State of Utah and not known to exist in the state that pose a serious threat to the state and should be considered as a very high priority.

Class 1B: Early Detection Rapid Response (EDDR) = **D**eclared noxious and invasive weeds not native to the State of Utah that are known to exist in the state in very limited populations and pose a serious threat to the state and should be considered as a very high priority.

Class 2: Control = Declared noxious and invasive weeds not native to the state of Utah, that pose a threat to the state and should be considered a high priority for control. Weeds listed on the control list are known to exist in varying populations throughout the state. The concentration of these weeds is at a level where control or eradication may be possible.

Class 3: Containment = Declared noxious and invasive weeds not native to the State of Utah that are widely spread. Weeds listed in the containment noxious weeds list are known to exist in various populations throughout the state. Weed control efforts may be directed at reducing or eliminating new or expanding weed populations. Known and established weed populations, as determined by the weed control authority, may be managed by any approved weed control methodology, as determined by the weed control authority. These weeds pose a threat to the agricultural industry and agricultural products.

Class 4: Prohibited = Declared noxious and invasive weeds, not native to the state of Utah, that pose a threat to the state through the retail sale or propagation in the nursery and greenhouse industry. Prohibited noxious weeds are annual, biennial, or perennial plants that the commissioner designates as having the potential or are known to be detrimental to human or animal health, the environment, public roads, crops, or other property.

[c] **D** = Documented occurrence on Hill AFB lands (per Air Force 2016a).

P = Potential to occur. A species is listed as having the potential to occur if there is a documented occurrence of that species in one or more of the counties where proposed Project activities would occur (per EDDMapS 2020; USDA NRCS 2020); or if the species is documented as occurring on Hill AFB lands, but it is not specifically noted whether it occurs at UTTR (per Air Force 2016a).

"-" = Species is listed in the State of Utah, but there are no documented occurrence of that species in the counties where proposed Project activities would occur (per EDDMapS 2020; USDA NRCS 2020).

E.2.8 FEDERALLY AND STATE-LISTED SPECIES CONSIDERED FOR HILL AFB AND UTTR

Common Name	Scientific Name	Status		Expected Habitat [c]	Likelihood of Occurrence	Documented Within Vicinity of Proposed Action[d]	Justification
		USFWS [a]	State [b] (UT)				
Mammals							
Canada lynx	*Lynx canadensis*	T/CH	-	The preferred habitat of the Canada lynx is montane coniferous forest and major food source is snowshoe hare (UDWR 2020).	Unlikely	No	The USFWS-mapped range overlaps the county associated with Hill AFB (USFWS 2020l). There are no natural heritage occurrences within counties associated with the Proposed Action (UNHP 2021). Sightings of the Canada lynx in Utah over the past twenty years are exceedingly rare. In 2002, the Forest Service found a hair sample in the Mani-La Sal National Forest located in the central part of the state, southeast of the Hill AFB and UTTR (UDWR 2020). Hill AFB and UTTR is not within preferred Canada lynx habitat and is outside designated critical habitat (USFWS 2020l).
Little brown bat	*Myotis lucifigus*	SOC, Under Review	-	In the west, this species is found mainly in mountainous and riparian areas in a wide variety of forest habitats; from tree-lined xeric-scrub to aspen meadows and Pacific Northwest coniferous rain forests. This species is closely associated with humans, often forming nursery colonies in buildings, attics, and other artificial structures (BCI 2020).	Potential	Yes	The approximate range extends throughout the state of Utah (BCI 2020). This species is widespread and common throughout Utah (UDWR n.d.) and has been documented at Hill AFB (Air Force 2016a). Rock outcrops represent one of the major land-cover types around Hill AFB and UTTR and provide the majority of the natural roosting locations (USGS 2016). The species also commonly roosts in artificial structures which exist in the form of buildings at Hill AFB and UTTR. Little brown bat could occur within the vicinity of the Proposed Action based on the overlapping species' range and documented occurrences. The species is under a USWFS discretionary status review, with an expected decision in late 2022.
Birds							
Yellow-billed cuckoo	*Coccyzus americanus*	T/PCH	-	A riparian obligate species, dependent on dense, continuous stands of riparian vegetation. Distribution of breeding cuckoos is influenced on the landscape level by how much cottonwood and willow dominated vegetation is available in riparian areas, and the width of those vegetative communities. In Utah, breeding distribution is tied to suitable riparian habitats west of the Rocky Mountain front (UDWR 2020).	Unlikely	No	The USFWS-mapped range overlaps the entire state of Utah (USFWS 2020l). Individual yellow-billed cuckoos are occasionally detected in scattered locations throughout the state. The species has been found regularly in only two areas of the state, both near the Green River: north of the town of Green River and around Ouray National Wildlife Refuge in the Uinta Basin, far from Hill AFB and UTTR. Although there were six documented occurrences (mostly collected in 1984) within the counties associated with Hill AFB and UTTR (UNHP 2021), there are no riparian habitats available for this species at Hill AFB or UTTR so the species is not expected to occur.
Fish							
Lahontan cutthroat	*Oncorhynchus clarkii henshawi*	T	-	Lahontan cutthroat are native to the Lahontan Basin of Oregon, California, and western Nevada and have been introduced in Utah where they are found in western Box Elder County. They are found in saline and alkaline lakes and streams (UDWR 2021).	Unlikely	No	The known distribution for the species is in the southwestern portion of Box Elder County, west of UTTR (UDWR 2021; UNHP 2021). There was one natural heritage occurrence from 2001 in Box Elder County (UNHP 2021). Lahontan cutthroat does not occur at Hill AFB or UTTR (USFWS 2021e).

Common Name	Scientific Name	Status		Expected Habitat [c]	Likelihood of Occurrence	Documented Within Vicinity of Proposed Action[d]	Justification
		USFWS [a]	State [b] (UT)				
Plants							
Ute ladies'-tresses	*Spirathes diluvialis*	T	-	Found in moist to very wet meadows, along streams, in abandoned stream meanders, and near springs, seeps, and lake shores. It grows in sandy or loamy soils that are typically mixed with gravels. In Utah, it is found in elevations ranging from 4,300 to 7,000 feet and occurs in Cache, Daggett, Duchesne, Garfield, Juab, Tooele, Uintah, Utah, Wasatch and Wayne counties (UDWR 2020).	Unlikely	No	The USFWS-mapped range overlaps the counties associated with Hill AFB and UTTR (USFWS 2020l; UDWR 2020). Four historic natural heritage occurrences also overlap the counties where Hill AFB and UTTR are located (UNHP 2021). The species is not known to occur within UTTR or Hill AFB and the Air Force identifies suitable habitat for the species only within UTTR-South (Air Force 2016a). Ute ladies'-tresses are not expected to occur within the Proposed Action due to the lack of recent documented occurrences and lack of potential habitat (UNHP 2021; UDWR 2020; USGS 2016).
Insects							
Monarch butterfly	*Danaus plexippus*	C	SCP-Level I	The monarch butterfly exhibits a cosmopolitan range, occurring in most temperate and tropical climates worldwide. The species' ancestral origin is North America but has spread globally with the post-colonization worldwide introduction of milkweeds (*Asclepias* spp.), their larval host plant (Pierce et al. 2014).	Potential	Yes	Due to their expansive range and the ubiquitous nature of monarch habitat (milkweed stands and floral/nectar resources), the monarch butterfly has potential to be present at Hill AFB and UTTR and milkweed is known to occur in this area (GBIF 2019).
Western bumble bee	*Bombus occidentalis*	SOC, Under Review	-	Western bumble bees are generalist pollinators that can be found in a wide variety of habitats, including open grassy areas, prairie, urban parks and gardens, sagebrush steppe, mountain meadows, and alpine tundra (MTNHP 2021a; Williams et al. 2014). The species' primary habitat requirements include access to nectar and pollen resources, including native wildflowers, non-native weedy species, and bee-pollinated crops such as cranberries and almonds (Evans et al. 2008).	Potential	No	The western bumble bee's historic range overlaps the Proposed Action at Hill AFB and the UTTR (Evans et al. 2008; Sheffield et al. 2016). Modelling performed by Graves et al. 2020 shows a low probability of western bumble bee occupancy at the UTTR and a slightly greater probability at the Hill AFB. The species is under a USWFS discretionary status review with an unknown decision date.

Definitions:

USFWS Status: T = Threatened, CH = Critical Habitat, PCH = Proposed Critical Habitat, SOC = Species of Concern.

State of Utah Status: NA

Likelihood of Occurrence:

- Very Unlikely = Proposed Action not within species range and no species occurrence(s) near Proposed Action – species not analyzed in EIS,
- Unlikely = Based on species occurrence(s), not known or suspected to occur near Proposed Action and no potential habitat present within Proposed Action – species not analyzed in EIS,
- Potential = Potential habitat exists within Proposed Action and/or species occurrence(s) documented in close proximity to or overlapping the Proposed Action – species analyzed in EIS.

Sources:

[a] USFWS 2021e.

[b] UDWR 2017.

[c] UDWR 2020.

[d] UNHP 2021.

E.3 ENDANGERED SPECIES ACT SECTION 7 CONSULTATION ITEMS LOG

Page intentionally left blank.

E.3 ENDANGERED SPECIES ACT SECTION 7 CONSULTATION ITEMS LOG

Page intentionally left blank.

USFWS Consultation Log

Date	Format	Subject	Participants	Summary
23-Apr-20	Telecon	Initial Telecon with USFWS to Discuss Overview of GBSD Project	(USFWS) Paul Abate, Laura Romin, Rita Reisor; (Tt/GBSD) Emmy Andrews (EA), Russell Bartholomew (RB), Walt Vering (WV), Aaron English (AE), Allen Holdaway	USFWS attendees were seated in Utah, and although none of them represented the appropriate offices, they agreed to find out who should have attended. Action Item: USFWS to provide Tt/GBSD with correct points of contact (POCs).
27-May-20	Telecon	Meeting Minutes–USFWS Telecon	(USFWS) Trina Vigil, Julie Reeves (JR), George Jordan (GJ), Paul Abate, Jake Martin (JM), Pamela Sponholtz, Leslie Ellwood (LE), Heidi Riddle (HR), Eliza Hines, Alex Schubert (AS), Steven Krentz, Maria Boroja (MB), Jerry Reinisch (JReinisch), Amanda Goldstein (AG), Bethany Davies (BD); (Tt/GBSD) EA, AE, RB	Project/bio survey schedules; species-specific status; inclusion of Ecological Services offices vs. Coordination offices; single Biological Assessment (BA), state-level POCs needed. Action Item: Tt/GBSD–Share survey areas and utility corridors with USFWS.
3-Jun-20	Email	USFWS POCs for GBSD EIS Bio Support	Email Thread (1) MB to EA; Email Thread (2) LE to EA	(1) MB provided a list of USFWS POCs by Air Force base (AFB) and state; (2) LE indicated there was a new POC in CO replacing her–George San Miguel (GSM). Action Item: Update POC lists.
11-Jun-20	Telecon	Final Minutes for USFWS Malmstrom TES Telecon	(USFWS) JM; USAF: RB, Mike Lebaron (ML); (Tt/GBDS) AE, EA, Lisa Harloe (LH), WV	Project standards and schedules regarding species and survey routes were shared; wetland impacts; JM recommended consulting with MT for Sage Grouse. Action Item: JM to provide a POC with MT for Sage Grouse.
18-Jun-20	Telecon	DASK	AE and JReinisch	Discussed Dakota skipper (DASK) habitat and survey of Minot missile field, schedule, and criteria for take.
19-Jun-20	Email	GIS Shapefiles of Minot Utility Corridors	AE to JReinisch	AE thanked JReinisch for his time discussing the (DASK over the phone and attached GIS layers as requested; additional questions regarding habitat were presented in the email.
19-Jun-20	Telecon	Final Minutes for USFWS FE Warren Mtg	(USFWS) JR, GSM, AS, Clark Jones (USAF) Zach Rigg (ZR) (Tt/GBSD) EA, Joe Campo (JC), Jason Cook (JCook), AE, LH, WV, Ann Zoidis (AZ)	AE and ZR gave an overview of the Project and indicated that USFWS is needed to review the study plans and provide input on the level of analysis required to issue a Biological Opinion (BO) considering the timeline. Action Item: Download updated Ute ladies'-tresses (ULT) and Preble's Meadow Jumping Mouse (PMJM) data–AE.

Date	Format	Subject	Participants	Summary
22-Jun-20	Email	Response: GIS Shapefiles of Minot Utility Corridors	JReinisch to AE	JR answered AE questions regarding botanical surveys regarding DASK; JR answered that they are most often used to check for habitat but not required.
24-Jun-20	Telecon	Meeting Minutes for USFWS Minot AFB Telecon 24 Jun 20	(USFWS) BD, AG, HR; (USAF) RB, ZR; (Tt/GBSD) EA, JCook, AE, LH, Erin McCarta (EM), WV, AZ	RB and AE gave an overview of the Project; ZR indicated that USFWS is needed to review the study plans and provide input on the level of analysis required to issue a BO considering the timeline. Action Item: HR–Review study plan and provide comments.
15-Jul-20	Email	Whooping Crane Habitat Model Request	(USFWS) Adam Ryba (AR) to LH	AR provided background and download links for the ND and SD models and GIS layers; also provided a contact at USFWS for the whooping crane sighting database–Matt Rabbe.
16-Jul-20	Email	North Dakota State University Statewide Pollinator Project	ZR and LH	ZR provided links to a database for download of a 2019 SD pollinator study.
17-Jul-20	Telecon	Whitebark Pine and Sage Grouse	GJ, AE, Josh Rodriguez	GJ and Tt staff discussed the low potential for whitebark pine in the utility corridor and timing restrictions associated with occupied grouse lek areas.
5-Aug-20	Email	ULT Surveys at FEW	(USFWS) JR; (Tt) Chris Ansari (CA); (BLM) Sanara Brock	Email train with USFWS and BLM biologists regarding survey windows and locations for ULT near the FEW project area.
14-Sep-20	Email	Agency Comments on BA Outline Discussion	AE and MB	MB provided USFWS field offices' comments on the BA outline to AE; she indicated providing comments about agenda items in advance of the Sep 22 meeting.
22-Sep-20	Telecon	USFWS Discussion of BA Outline	(USFWS) HR, AG, BD, MB, AS, JM, JR, Marion Clement (MC); (USAF) RB; (Tt/Quantitech) Susan Thornton, JCook, AE, Julie Kaplan (JK), EM, AZ	AE led discussion of USFWS staff's comments on the draft outline for the BA; covered each comment one by one and gained clarification on species of concern (SOC) and direct/indirect effects.
7-Oct-20	Email	USFWS Mtg Minutes Follow-up	(USFWS) HR and (Tt) EM	HR provided follow-up info for action item regarding SOC and added two more species not previously discussed; this info was forwarded to AE and AZ for inclusion in the BA process.

Date	Format	Subject	Participants	Summary
9-Dec-20	Telecon	USFWS Discussion of BA	(USFWS) Tyler Abbott, MB, BD, JM, JR, JReinisch, HR, GSM, AS; (Tt/Quantitech) Richard Ayres (RA), Karen Brimacombe, JCook, AE, LH, Hilary Heist (HH), JK, EM, Michael Ottenlips (MO), AZ	AE opened discussion with summary of DOPAA/ EIS scoping comments to date; one comment in particular came from USFWS regarding Platt River withdrawals; update on the project description, discussion of towers, work hubs and laydown areas; species list reviewed and discussed SOC, Candidate, Listed.
19-Jan-21	Email	NLEB Hibernacula and Roost Tree Data	HR to AE	HR responded with email and data attachments to AE's request for northern long-eared bat (NLEB) data in ND.
19-Jan-21	Telecon	USFWS Discussion of BA–Final Revised Minutes	(USFWS) MB, AG, JM, JR, JReinisch, HR, GSM, AS, Allison Arnold; (USAF) RB, Allen Holdaway, ZR, Dewey Cooper (DC); (Tt/Quantitech) RA, Heidi Wellborn (HW), Karen Brimacombe, JCook, Matt Cambier (MC), AE, LH, HH, JK, EM, MO, AZ	Reviewed updated BA outline; discussed Action Area with USFWS input and possible additional species within the Action Area; conservation measures are needed–does USFWS have or know any? Species updates needing to be addressed–candidate, SOC; many action items for species data from USFWS.
19-Jan-21	Email	Action Item Deliverable–USFWS	JReinisch to AE	DASK conservation guidelines attached to email.
19-Jan-21	Email	Action Item Deliverable–USFWS	(USFWS) AR to AE; HR	AR provided links to the whooping crane model at the request of HR.
19-Jan-21	Email	Action Item Deliverable–USFWS	HR to LH	Whooping crane timing restrictions provided in text.
20-Jan-21	Email	Action Item Deliverable–USFWS	Natalie Gates, MB, AE	Regal fritillary range and info on subspecies shared.
27-Jan-21	Email	Action Item Deliverable–USFWS	HR to EM	HR provided the requested information regarding red knot in a D-key as well as timing restrictions for piping plover.
27-Jan-21	Email	Action Item Deliverable–USFWS	JR to EM and AZ	Western bumble bee range maps were provided within scholarly articles attached to the email.
4-Feb-21	Email	Action Item Deliverable–USFWS	JM to EM	Grizzly bear conservation measures (food-storage measures) provided in email.

Date	Format	Subject	Participants	Summary
17-Mar-21	Email	PMJM in WY, Goshen County	(USFWS) JR to (USAF) AS; (Tt) HH	Email thread initiated by HH to AS on Mar 9, 2021, regarding conflict of data on occurrence of PMJM in Goshen County, WY, based on existing sources of info; HH followed up with AS on Mar 17 for a status on the request of info, for which AS directed her to JR of USFWS; JR responded directly on Mar 17 with a direction to leave Goshen County out of the species' range in the BA as the current area of influence ends at the county line.
30-Mar-21	Telecon	Monarch Butterfly Potential Impacts–call with Laurel Hill	MO and (USFWS) Laurel Hill	MO discussed monarch butterfly impacts with USFWS Laurel Hill on Mar 30, 2021, on a conference call; currently a candidate species, to be reviewed in 4 years; midwestern populations associated with GBSD; disturbance overall would be temporary, but species will leave with the habitat; migration timing–would cause less impact if trenching completed in winter–between generations; will send more info regarding noise impact on larva.
9-Dec-21	Telecon	Discussion of DASK with JReinisch	(USFWS) JReinisch; (USAF) DC; (Tt) JCook, John Crookston (JohnC), AE, LH, CA, MO, Nate Schwab (NS), EM	AE and JC provided an update of the Project; AE included a brief update on the BA and its schedule; LH led discussion with JReinisch specifically about items such as significance determination; field surveys for habitat vs. occupancy surveys; conservation measures such as habitat avoidance, directional drill, timing; additional discussion on other invert species.
13-Jan-2022	Telecon	Discussion of Communication Towers and Migratory Bird Species	(USFWS) Joelle Gehring, MB; (USAF) DC, Robbie Knight (RK), ML; (Tt/Axient) RA, HW, JCook, JohnC, AE, LH, CA, MC, HH, JK, Christy Meyer (CM), MO, NS, Scott Flinders (SF), EM	AE and JCook provided a project update; discussion included conservation measures for construction and operation at comm towers; group attempted to address effects on ESA species related to comm towers, but appropriate USFWS staff for those questions were not on the call. AE and MB agreed to put together spreadsheet of species and associated states to identify USFWS staff required for ESA questions; USFWS to provide agency-specific guidance related to use of flight diverters.
18-Jan-2022	Telecon	FEW Species Discussion–PMJM, CBP, ULTO	(USFWS) MB, AS, JR, GSM, Adam Hunley; (USAF) DC, ML; (Tt) JCook, JohnC, AE, LH, CA, MC, HH, JK, CM, NS, EM	JC provided an update of the Project; discussion focused on specifics for PMJM, ULTO, and Colorado butterfly plant (CBP) in both the BA and EIS; For PMJM, it is recommended by USFWS to use range data over the WY area of influence data; AS offered directional drilling advice surrounding PMJM at FEW; no issues with CBP.

Date	Format	Subject	Participants	Summary
11-Mar-22	Telecon	Discussion of PMJM Data at FEW AFB	(USFWS) AS; (WYNDD) Ian Abernathy; (Tt) LH, NS, HH, SF, EM	SF presented real-time GIS data to indicate the data inconsistencies seen when mapping PMJM occurrences; AS spoke to data from the INRMP and the studies conducted for genetic testing of the mice; Ian Abernathy recommended submitting a new request to WYNDD for all *Zapus* spp; discussion also included the conservation area at FEW for PMJM and restoration goals/measures.
10-May-22	Email	Submittal of BA to USFWS–Request for Initiation of Formal Consultation	(USAF) Stephanie Newcomer (SNewcomer) to (USFWS) MB	Official submittal of BA to USFWS–email indicating that the BA was transmitted to the USFWS via DoD SAFE; USAF requested the initiation of formal consultation.
13-Jun-22	Telecon	Discussion of USFWS Comments on the BA	(USFWS) MB, Darren LeBlanc (DL), JM, JReinisch, HR; (USAF) RB; (Tt) JohnC, LH, JK, CM, NS, WV, AZ	USFWS leads, including DL (USFWS Section 7 Coordinator for Mountain-Prairie Region), discussed species effects determinations and additional species such as the wolverine; the Bio team proposed a method for responding to comments, which includes appendices or attachments to the BA; USFWS indicated a BO in mid-November would be possible.
14-Jun-22	Email	Notice to USAF of Wolverine Status Change	(USFWS) MB, DL; (USAF) RB, SNewcomer; (Tt) JCook, LH, WV	MB emailed the project team to provide notice that wolverine status had been re-established as proposed threatened and would need to be added to the BA for determination. She apologized for not mentioning this during the June 13 call.
16-Jun-22	Email	USFWS Consultation Timeclock Dependent on Wolverine	(USFWS) DL to S Newcomer, MB, JCook, WV, RB, LH	DL indicated to the team that the wolverine status would need to be addressed in the BA in order to officially start the consultation timeclock, but USFWS had begun the process of drafting their BO; the USFWS-signed 30-day BA review letter of insufficiency was attached.
16-Jun-22	Attachment	USFWS Official Letter of BA Insufficiency	Attachment to above	30-day review letter signed by USFWS addressed to USAF indicating an insufficient BA to proceed with formal consultation; wolverine needed to be addressed; however, the draft of the BO would begin.
21-Jun-22	Email	USFWS Additional Species Comments	(USFWS) MB, JM; (Tt) WV	WV asked MB if JM had re-evaluated the grizzly bear section of the BA as mentioned during the June 13 meeting; MB included JM's note to her regarding the need for additional habitat analysis.

Date	Format	Subject	Participants	Summary
07-Jul-22	Email	Submittal of BA Comment Responses and Attachments	SNewcomer to MB, JCook, RB, WV, Kristin Shields, JK, RA	SNewcomer officially submitted the response to USFWS BA comments in a summary of attachments.
07-Jul-22	Attachment	BA Comment Response Transmittal Letter	Addressed to MB	Official transmittal letter of BA comment responses; signed by USAF; species summary.
07-Jul-22	Attachment	BA Comment Response Matrix and Materials	Attachment to above	CRM accompanying transmittal letter and species addendums (attachments A and B).
15-Jul-22	Telecon	Discuss Status of BA Comment Response Package	JCook to MB	JCook reached out to MB to ask about the status of USFWS review of the BA Comment Response package and consultation timeline. She indicated that the Field Offices would be going over everything in a week or so and figuring out what feedback was necessary and how it all would affect the timeline.
10-Aug-22	Telecon	Discuss USFWS BA Recommendations on Effects Determinations	(USFWS) DL; (USAF) RK; (Tt/Axient) JCook, JohnC, LH, JK, MO, NS, WV, AZ, RA, HW	A teleconference was held with DL to discuss recommendations on the BA effects determinations; species discussed included Canada lynx, whitebark pine, DASK, NLEB, whooping crane; additional mitigation measures also discussed.
10-Aug-22	Email and Attachment	Canada Lynx Aug 2022 Map–Email	(USFWS) DL, JM; (USAF) SNewcomer; (Tt) JCook	DL and JM provided an updated Canada lynx range map to compare to the proposed action.
15-Aug-22	Email	BA Determinations Communication and Lynx Data	JCook and DL	An email thread between JCook and DL included a summary of species to be updated (Aug 10) and updated Canada lynx GIS data supplied by USFWS (Aug 15).
31-Aug-22	Email	Status Check on BA Consultation	DL, JCook, S Newcomer	JCook updated DL with a summary of species updates in the BA and asked about when to staff an updated letter of the determinations.
14-Sep-22	Telecon	USFWS and USFS Input on BA for Lynx and Grizzly Bear	(USFWS) JM; (USFS) Denise Pengeroth (DP), Lori Wollan; (USAF) RB, RK, SNewcomer; (Tt/Axient) JCook, JohnC, LH, JK, NS, WV, AZ, RA	Teleconference discussion included lynx analysis using LAUs and designated critical habitat and how both agencies would like to see it broken out; grizzly bear discussion focused on the presence of roads being built for the Project and how that would meet or breach certain criteria in the National Forest areas; drilling down into specific habitats would help lessen the effects determinations.

Date	Format	Subject	Participants	Summary
16-Sep-22 – 7 Oct-22	Email	USFS Pengeroth Follow-Up	DP to JCook, S Newcomer, JM, RK, RB, WV, LH, NS, AZ, JK	DP recounted discussion of Sep 14 meeting regarding lynx data and grizzly bear habitat; she included GIS data and example BAs. Several follow-up email communications occurred after the Sep 14, 2022, teleconference regarding grizzly bear and lynx analyses.
7-Oct-22	Email	Lynx Information Request–USFS	NS, LH, David Kemp (DKemp)	NS conversed with DKemp of USFS between Sep 21 and Oct 6 regarding data for grizzly bear and then more extensively for Canada lynx; DKemp provided insight on LAU mapping and updates and possible alternative conditional settings for specific lynx disturbances, such as fires.
17-Oct-22	Telecon	USFWS and USFS Input on Grizzly Bear, Lynx, and TCB	(USFWS) DL, JM; (USFS) DP; (USAF) SNewcomer; (Tt/Axient) JCook, JohnC, LH, JK, NS, AZ	A teleconference was held with DL, JM, and DP to discuss in depth specific analysis of grizzly bear, Canada lynx, tri-colored bat (TCB), and wolverine; discussion was focused on road design through the National Forest area and impacts on grizzly bear.
21-Oct-22	Telecon	USFWS and USFS Input on Canada Lynx Analysis	(USFWS) JM; (USFS) DP; (Tt) JohnC, LH, JK, NS, AZ	A teleconference was held with JM and DP to continue species analysis discussion; focus was on Canada lynx, including LAUs, foraging and denning, and snowshoe hare mapping; additional discussion occurred regarding grizzly bear.
24-Oct-22	Telecon	USFWS and USFS Input on Analysis for Grizzly Bear	(USFWS) JM; (USFS) DP; (Tt) JohnC, LH, JK, NS, AZ, EM	A teleconference was held with JM and DP to continue species analysis discussion; focus was on grizzly bear and benchmark criteria that USFS uses to assess impacts on the species; location and duration of roads is the most critical feature.
27-Oct-22	Email	USFWS Input on Whitebark Pine Conference Opinion	(USFWS) JM; (USFS) DP; (Tt) JohnC, LH, JCook, NS, JK, AZ, WV, EM	Email thread with USFWS regarding conference opinion on the whitebark pine. After subsequent analysis, the request for a conference opinion was removed. USFWS confirmed that understanding.
10-Nov-22	Email	BA Comment Response and Attachments–Updated	(USFWS) JM, DL; (USFS) DP; (USAF) SNewcomer; (Tt/Axient) JCook, LH, JohnC, EM, JK, NS, AZ, RA, HW	JCook delivered to JM the final BA updates, which included the attachments for wolverine, Canada lynx, grizzly bear, and TCB; the official letter was not ready at that time and was not included with the email.

Date	Format	Subject	Participants	Summary
29-Nov-22	Email	BA Cover Letter and Attachments	(USFWS) MB, DL, JM; (USAF) RB, RK, SNewcomer; (Tt) JCook	SNewcomer delivered to MB the signed BA cover letter and all updated BA comment responses and attachments; additionally, it was requested that the USFWS provide an update on the delivery of the BO.
29-Nov-22	Email	BO Delivery Update	(USFWS) DL, MB, JM; (USAF) SNewcomer, RB, RK; (Tt) JCook	DL responded to the request for an update on the BO delivery; the draft BO is expected by Dec 5, 2022, the final signed by Dec 15, 2022.
5-Dec-22	Email and Attachment	Draft Informal Consultation	(USFWS) DL; (USAF) SNewcomer; (Tt) JCook	DL provided the draft informal consultation for all species; the draft formal consultation for DASK and piping plover is expected by the end of the week, Dec 9.
15-Dec-22	Email and Attachment	Draft Formal Consultation	(USFWS) DL; (USAF) SNewcomer; (Tt) JCook, JK	USFWS provided the draft formal consultation, which included analysis of effects on the DASK and piping plover, for review and comment.
21-Dec-22	Email and Attachment	Comments on Draft Formal Consultation	(Tt) JCook, JK; (USFWS) DL; (USAF) RB, RK, SNewcomer	Tt/Axient provided comments to USFWS on the draft formal consultation.
22-Dec-22	Email and Attachment	Receipt of Final BO	(USFWS) MB, Tom McDowell, Stephen Small; (USAF) SNewcomer, RB, RK; (Tt) JCook, JK	USFWS (MB) provided the final BO and informal consultation concurrence.
19-Jan-23	Email and Attachment	Receipt of BO Amendment	(USFWS) DL, MB, Tom McDowell, Stephen Small; (USAF) SNewcomer, RB, RK; (Tt) JCook, JK	USFWS (DL) provided a BO amendment that analyzes the Project's effects on the whitebark pine, newly listed as a threatened species.

E.4 SENTINEL BIOLOGICAL OPINION, 22 DECEMBER 2022

Page intentionally left blank.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Mountain-Prairie Region

IN REPLY REFER TO:
FWS/R6/2022-0054024

MAILING ADDRESS:
Post Office Box 25486
Denver Federal Center
Denver, Colorado 80225-0486

STREET LOCATION:
134 Union Boulevard
Lakewood, Colorado 80228-1807

Howard N. Kosht
Executive Director, Strategic Plans, Programs, and Requirements
HQ AFGSC A5/8
66 Kenney Avenue
Barksdale AFB, LA 71110

Subject: Biological Opinion on the U.S. Air Force's proposed Sentinel Ground Based Strategic Deterrent intercontinental ballistic missile system and Minuteman III decommissioning, 2022-0054024

Dear Mr. Kosht:

This document transmits the U.S. Fish and Wildlife Service's (Service or USFWS) biological Opinion (Opinion) regarding U.S. Air Force's (USAF) proposal to; (a) deploy the Ground Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) system, officially named Sentinel, and (b) decommission and dispose of the Minuteman III (MMIII) ICBM system (cumulatively proposed action or Project). Project activities would take place at F.E. Warren Air Force Base (AFB), Malmstrom AFB, Minot AFB, Hill AFB, and Utah Test and Training Range (UTTR), Camp Guernsey, and Camp Navajo, as well as associated missile fields and utility corridors in the states of North Dakota, Montana, Wyoming, Colorado, Arizona, and Utah. The USAF determined that their proposed action may affect, and is likely to adversely affect the following federally listed species: the threatened piping plover (*Charadrius melodus*) and Dakota skipper (*Hesperia dacotae)*. The USAF determined that their proposed action may affect, but is not likely to adversely affect the following federally listed species: the threatened grizzly bear (*Ursus arctos horribillis*), Canada lynx (*Lynx canadensis*), Preble's meadow jumping mouse (*Zapus hudsonius preblei*), red knot (*Calidris canutus rufa*), whooping crane (*Grus americana*), bull trout (*Salvelinus confluentus*), Ute ladies'-tresses (*Spiranthes diluvialis*) and endangered Northern long-eared bat (*Myotis septentrionalis*). In addition, the USAF determined their actions may affect, but are not likely to adversely affect designated critical habitat for the Canada lynx, bull trout, and piping plover. The USAF made not likely to jeopardize determinations for the candidate species monarch butterfly (*Danaus plexippus*) and proposed threatened wolverine (*Gulo gulo*) and whitebark pine (*Pinus albicaulis*), and the proposed endangered tri-colored bat (*Perimyotis subflavus*). This Opinion was prepared pursuant to section 7(a)(2) of the Endangered Species Act (ESA or Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Our analysis and concurrence for the USAF's may affect, not likely to adversely affect listed species

determinations and not likely to jeopardize determination for the candidate and proposed species are located in Appendix A (attached).

The purpose of the proposed action is to replace all land-based MMIII missiles deployed in the continental U.S. with the GBSD weapon system. The need for the action is to comply with Public Law 115-232, as outlined above. Under federal law and to meet national security requirements, the USAF must implement a strategy "to accelerate the development, procurement, and fielding of the ground based strategic deterrent program" (John S. McCain National Defense Authorization Act for Fiscal Year 2019 [Public Law 115-232 Section 1663]). The law directs:

> *...that the GBSD program includes the recapitalization of the full intercontinental ballistic missile weapon system for 400 deployed missiles and associated spares and 450 launch facilities, without phasing or splitting the program, including with respect to the missile flight system, ground-based infrastructure and equipment, appropriate command and control elements.*

Implementing the action will ensure that the U.S. continues to have effective, responsive, and resilient ICBMs and associated infrastructure for the land-based leg of its nuclear triad and the capacity and adaptability to manage and respond to shifting global requirements. The proposed ICBMs and supporting upgrades would allow the U.S. to continue to offer long-term tangible evidence to both allies and potential adversaries of our nuclear weapons capabilities, thus contributing to nuclear deterrence and assurance and providing a hedge against arms competition.

This Opinion is based upon information in the following documents: (1) the 2022 USAF Biological Assessment (BA) and supplements (USAF 2022); (2) Service Recovery Plans and 5-Year reviews; (3) biological literature cited herein (see Literature Cited); and (4) other information in our files. A complete project record of this consultation is on file at the Service's Mountain Prairie Regional Office (R6).

On July 5, 2022, the U.S. District Court of the Northern District Court of California vacated the 2019 regulations implementing section 7 of the Endangered Species Act (ESA). On September 21, 2022, the Ninth Circuit Court of Appeals granted a request to stay the U.S. District Court of Northern California's July 5, 2022, order that vacated the 2019 ESA regulations. On November 14, 2022, the U.S. District Court of Northern California issued a final ruling remanding the 2019 regulation revisions back to the Service for further action, but, determined vacatur of the 2019 regulations was not appropriate. As a result, the 2019 regulations are again in effect, and the Service has relied upon the 2019 regulations in rendering this Opinion. However, because the outcome of the legal challenges to 2019 ESA Regulations is still unknown, we considered whether our substantive analyses and conclusions in this consultation would have been different if the pre-2019 regulations were applied. Our analysis included the prior definition of "effects of the action," among other prior terms and provisions. We considered all the "direct and indirect effects" and the "interrelated and interdependent activities" when determining the "effects of the action." As a result, we determined the substantive analysis and conclusions would have been the same, irrespective of which regulations applied.

Introduction

The USAF developed a BA to analyze the effect of the proposed action on Service trust resources. **Table 1** summarizes the potential for the project to affect listed species or designated critical habitat in the action area. The table includes the BA effects determination for each species and designated critical habitat when considering the implementation of the proposed actions and species-specific conservation measures. In summary, 10 federally listed species, one candidate species, three proposed species, and designated critical habitat for three listed species were fully analyzed in the GBSD BA.

The USAF determined that the proposed action may affect, but is not likely to adversely affect, eight species and may affect, is likely to adversely affect two species. It was also determined that the project may affect, but is not likely to adversely affect critical habitat for three species. A determination of not likely to jeopardize was provided for three proposed species and a conditional effects determination of not likely to jeopardize was made for the candidate species.

Table 1. Summary of Effects

Common name	Scientific name	Federal status	Portion of action area in which potentially present[a]	Effects determination
Mammals				
Black-footed ferret	*Mustela nigripes*	Endangered/ experimental, nonessential	F.E. Warren and Malmstrom	No effect
Canada lynx	*Lynx canadensis*	Threatened	Malmstrom, Hill, and UTTR	NLAA
Grizzly bear	*Ursus arctos horribilis*	Threatened	Malmstrom	NLAA
Northern long-eared bat	*Myotis septentrionalis*	Threatened	F.E. Warren, Malmstrom, and Minot	NLAA
Preble's meadow jumping mouse	*Zapus hudsonius preblei*	Threatened	F.E. Warren	NLAA
Tri-colored bat	*Perimyotis subflavus*	Proposed endangered	F.E. Warren	NLJ
Wolverine	*Gulo gulo*	Proposed threatened	F.E. Warren, Malmstrom, Minot, Hill, and UTTR	NLJ
Birds				
Eastern black rail	*Laterallus jamaicensis*	Threatened	F.E. Warren	No effect
Mexican spotted owl	*Strix occidentalis lucida*	Threatened	F.E. Warren	No effect
Piping plover	*Charadrius melodus*	Threatened	Minot	LAA
Red knot	*Calidris canutus rufa*	Threatened	Malmstrom and Minot	NLAA

Fishes				
Bull trout	*Salvelinus confluentus*	Threatened	Malmstrom	NLAA
Pallid sturgeon	*Scaphirhynchus albus*	Endangered	F.E. Warren, Malmstrom, and Minot	No effect
Insects				
Dakota skipper	*Hesperia dacotae*	Threatened	Minot	LAA
Monarch butterfly	*Danaus plexippus*	Candidate	F.E. Warren, Malmstrom, Minot, Hill, and UTTR	NLJ[b]
Conifers and cycads				
Whitebark pine	*Pinus albicaulis*	Proposed threatened	Malmstrom	NLJ
Flowering plants				
Blowout penstemon	*Penstemon haydenii*	Endangered	F.E. Warren	No effect
Ute ladies'-tresses	*Spiranthes diluvialis*	Threatened	F.E. Warren, Hill, and UTTR	NLAA
Western prairie fringed orchid	*Platanthera praeclara*	Threatened	F.E. Warren	No effect
Critical habitat				
Bull trout	*Salvelinus confluentus*	Designated critical habitat	Malmstrom	NLAA
Canada lynx	*Lynx canadensis*	Designated critical habitat	Malmstrom	NLAA
Piping plover	*Charadrius melodus*	Designated critical habitat	Minot	NLAA
Whooping crane	*Grus americana*	Endangered	F.E. Warren and Minot	NLAA

Source: USFWS 2022.
Notes: LAA = May affect, likely to adversely affect; NLAA = May affect, not likely to adversely affect; NLJ = Not likely to jeopardize the continued existence.
[a] Determined by uploading the action area and project counties into the USFWS' Information for Planning and Consultation (IPaC) website to generate a species list. Additional species were included per discussions with USFWS.
[b] Conditional effects determination is provided due to Monarch butterfly being a candidate species.

Consultation History

Pursuant to ESA Section 7(a)(2), federal action agencies are required to consult with the Service if their project may affect any listed species (50 CFR § 402.14[a]). The USAF initiated early and informal consultation with the Service on April 23, 2020, conducting teleconferences and coordinating with points of contact (POCs) within the states in which GBSD deployment-related project elements would be implemented (Colorado, Montana, Nebraska, North Dakota, Utah, and Wyoming) to facilitate regional and species-specific discussions. During these early opportunities to communicate, USAF personnel provided Service representatives with a summary of the proposed GBSD deployment program, discussed the consultation process, and received initial input on biological resources.

- April 23, 2020, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: Initiation of informal consultation with USFWS; initial discussion included only USFWS

representatives in Utah who provided USAF staff with additional USFWS contacts needed for the project.

- May 27, 2020, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: Discussion with USFWS including multiple representatives from different states (Colorado, Montana, North Dakota, Utah, and Wyoming) regarding project and biological survey schedules; coordination between USFWS Ecological Services Field Office (ESFO) and Regional Office (RO) representatives.
- June 3, 2020, Email from USFWS: Agency POC provided subject matter experts and field office POCs for contact list update.
- June 11, 2020, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: Malmstrom AFB threatened and endangered species discussion included project schedules, biological study plan review, wetland impacts, species and survey routes; consultation with Montana about sage-grouse was recommended by USFWS.
- June 18, 2020, Teleconference with USAF/Tetra Tech and USFWS. Summary: Discussion on Dakota skipper, the species habitat and survey of Minot AFB missile field, schedule, and criteria for take.
- June 19, 2020, Email from USAF: Minot AFB geographic information system (GIS) layers: USAF/Tetra Tech provided to USFWS GIS layers related to the proposed utility corridors.
- June 19, 2020, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: F.E. Warren AFB threatened and endangered species discussion included the project overview, biological study plan review, and request for USFWS input on the level of analysis required to issue a BO.
- June 22, 2020, Email from USFWS: Dakota skipper habitat: USFWS responded to questions regarding botanical surveys for use in Dakota skipper habitat analysis.
- June 24, 2020, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: Minot AFB threatened and endangered species discussion included the project overview, biological study plan review, and request for USFWS input on the level of analysis required to issue a BO.
- July 15, 2020, Email from USFWS: Whooping crane information: USFWS provided modeling information to Tetra Tech, including a contact with USFWS for the sighting database.
- July 16, 2020, Email from USAF: USAF staff provided Tetra Tech with a database link for a pollinator study conducted by North Dakota State University.
- July 17, 2020, Teleconference with USFWS and Tetra Tech: Whitebark pine and sage-grouse discussion regarding the low potential for whitebark pine to occur in the utility corridor and timing restrictions associated with occupied grouse lek areas.
- August 5, 2020, Emails from USFWS: USFWS and Tetra Tech discussed survey windows and locations for Ute ladies'-tresses near the F.E. Warren AFB project area.
- September 14, 2020, Email from USFWS: USFWS lead POC provided Tetra Tech with comments on the draft outline of the BA from USFWS ESFOs.
- September 22, 2020, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: BA outline discussion; a summary of USFWS comments was covered and clarification was gained from USFWS staff on species of concern (SOC) pertaining to the National Environmental Policy Act (NEPA) Environmental Impact Statement (EIS) and regarding direct and indirect effects.

- October 7, 2020, Email from USFWS: USFWS provided follow-up information to the September teleconference on SOC for the EIS and added two species not previously discussed.
- December 9, 2020, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: USFWS discussion of BA opened with a summary of EIS scoping comments to date, updates to the project description, discussion of communication towers proposed, workforce hubs and laydown areas; the species list was reviewed and discussed, including whether to include SOC, candidate, and de-listed/listed species.
- January 19, 2021, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: USFWS discussion of BA began with a review of the updated BA outline; further discussion included the action area and possible additional species within that area; USFWS was asked to provide any known conservation measures for species in the project list; species updates that need to be addressed, including candidate and SOC (for EIS).
- January 19, 2021, Email from USFWS: USFWS provided narrative information on the northern long-eared bat hibernacula and included data for roost trees as requested for the species in North Dakota.
- January 19, 2021, Email from USFWS: USFWS provided Dakota skipper conservation guidelines as attachment to email.
- January 19, 2021, Email from USFWS: USFWS provided links to the whooping crane model.
- January 19, 2021, Email from USFWS: USFWS provided whooping crane timing restrictions.
- January 20, 2021, Email from USFWS: USFWS provided information on the range of regal fritillary and the analysis of subspecies.
- January 27, 2021, Email from USFWS: USFWS provided information regarding red knot in a D-key as well as timing restrictions for piping plover.
- January 27, 2021, Email from USFWS: USFWS provided attachments of scholarly articles the Service uses that indicate western bumble bee range maps.
- February 4, 2021, Email from USFWS: USFWS provided grizzly bear conservation measures (food-storage measures).
- March 17, 2021, Email from USFWS: USFWS provided direction that Preble's meadow jumping mouse (Preble's) range does not include Goshen County, WY.
- March 30, 2021, Teleconference with USFWS and Tetra Tech: Monarch Butterfly discussion on duration and seasonal timing of effects.
- December 9, 2021, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: Dakota skipper discussion included effects, survey types, and conservation measures for Dakota skipper and other invertebrate species.
- January 13, 2022, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: Communication tower discussion regarding conservation measures for construction and operation of communication towers and available USFWS guidance.
- January 18, 2022, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: Ute ladies'-tresses, Colorado butterfly plant, and Preble's discussion included data being used, field surveys, and conservation measures.
- March 11, 2022: Teleconference with USFWS, USAF/GBSD, Wyoming Natural Diversity Database (WYNDD) and Tetra Tech: Discussion of Preble's habitat at F.E. Warren AFB and use of data in EIS and BA.

- May 10, 2022: Email from USAF to USFWS including the official submittal of the Project BA and request to initiate formal section 7 consultation.
- June 13, 2022: Meeting with the USAF and Tetra Tech to discuss USFWS comments on the USAF GBSD BA.
- June 14, 2022: Email from the USFWS to USAF providing notice of a change in status for the wolverine to proposed threatened and indicated an affect analysis for wolverine would need to be addressed in a BA amendment.
- June 15, 2022: The USFWS submitted a letter to the USAF noting that the GBSD BA did not contain sufficient information to initiate formal section 7 consultation on the proposed project.
- June 16 and 21, 2022: Emails from the USFWS to the USAF/GBSD and TetraTech providing input on additional information or revisions needed to the BA.
- July 7, 2022: Email and Attachments from Air Force to USFWS providing a complete comment response matrix, which addressed USFWS input and comments received. Six additional attachments to the BA also were submitted on this date with the comment response matrix, covering proposed and revised conservation measures; providing Dakota skipper habitat survey reports; providing a project timing assumptions document; additional detail on piping plover designated critical habitat; the wolverine assessment; and additional information for Canada.
- July 12, 2022: USAF provided the USFWS with the BA comment response matrix, letter, and BA appendices.
- August 9, 2022: USFWS Refuges requested the USAF provide them with maps of the proposed project infrastructure locations in order to determine if any adverse effects to refuge property is likely.
- August 10, 2022: Conference call between the USFWS, USAF, and Tetra Tech to discuss updated information for the BA and species effect determinations. Discussion of the BA effect determinations and potential updates to evaluations in the BA including potentially lessening existing determinations. Species discussed were the Canada lynx, whitebark pine, Dakota skipper, northern long-eared bat, and whooping crane. The USFWS suggested that whitebark pine may be listed as a conference opinion species on this call. Shortly after call completion, USFWS sent the updated Canada lynx range map via electronic communication.
- August 15, 2022: Email exchange between the Service and Tetra Tech to update effects analysis and determination on several listed species, including; Canada lynx and critical habitat, whitebark pine, Dakota skipper, Northern long-eared bat, and whooping crane. USAF provided USFWS August 10 meeting minutes in their email response which included a summary regarding the species discussed on the August 10, 2022 call. The email contained a request for a formal conference opinion for whitebark pine and an updated effects determination for the whooping crane.
- August 31, 2022: The USAF and Tetra Tech provided requested information to the USFWS on revisions to their GBSD BA and effects determinations, responding to all of the issues raised in our June 15, 2022, correspondence.
- September 14, 2022: Teleconference between the USFWS, USAF, Tetra Tech, and the USFS to discuss potential adverse effects to grizzly bear and Canada lynx on USFS property related to the GBSD project.
- September 19, 2022: The USFWS notified that all major concerns with the GBSD BA

had been addressed and formal consultation was initiated. Additional coordination was ongoing to discuss minor issues and to coordinate with the USFS on effects to grizzly bear and Canada lynx.

- September 22, 2022: The USFW provided a GIS shapefile to Tetra Tech and the USAF showing the locations of USFWS protected wetland easements within ½ mile of the proposed utility corridor for the Malmstrom AFB portion of the project.
- October 7, 2022, Email between HLC NF and Tetra Tech—Dave Kemp from HLC NF confirmed the method was acceptable to update the Canada Lynx LAU LB-15 to "early stand initiation" structure class within the Yogo fire boundary.
- October 17, 2022: Teleconference between the USFWS, USFS, and Tetra Tech to discuss the effects analysis for grizzly bear and Canada lynx.
- October 21, 2022: Additional coordination between the USFWS, USAF, Tetra Tech, and the USFS on potential GBSD effects to the grizzly bear and Canada lynx.
- November 2, 2022: The USAF provided revisions to the BA related to their effects determination for the grizzly bear, Canada lynx and its designated critical habitat, and a non-jeopardy determination for the proposed endangered tri-color bat.
- November 10, 2022, Email and Attachments from Tetra Tech to USFWS and USAF providing the BA comment responses and attachments A, B, C, D, E, F, G, and H to assist USFWS with their timeline of determinations review and Biological Opinion development.
- November 29, 2022: The USAF submitted their final signed BA revisions to the Service.
- December 5, 2022: Email attachment from USFWS to USAF providing the draft informal consultation for USAF review and comment. USFWS stated the final informal consultation will be an appendix to the formal consultation.
- December 15, 2022: Email attachment from USFWS to USAF providing the draft formal consultation, which included analysis of effects to the Dakota skipper and piping plover, for review and comment.
- December 21, 2022: Email from the USAF to the USFWS with comments on the draft formal consultation.

BIOLOGICAL OPINION

Proposed Action

The GBSD project includes replacing all land-based MMIII ICBMs deployed in the continental United States with GBSD ICBMs. All components of the MMIII missile would be replaced, including the three motors, two inter-stages, propulsion system rocket engine, and missile guidance set. All missile alert facilities (MAFs), launch facilities (LFs), communication systems, infrastructure, and technologies would be modernized or replaced as necessary to support the GBSD weapon system. The existing MAFs and LFs would be updated extensively to completely refurbished condition to meet the requirements of the GBSD system. GBSD deployment activities would not include generating or disposing of nuclear material, and the number of land-based nuclear missiles in the continental United States would not change.

Deployment would primarily occur at F.E. Warren AFB in Wyoming; Malmstrom AFB in Montana; and Minot AFB in North Dakota. Maintenance, training, storage, and support actions would occur at these three main operating bases as well as at Hill AFB and UTTR in Utah, Camp Guernsey in Wyoming, and Camp Navajo in Arizona. Elements of the project would include the following:

- On-base elements of the GBSD deployment, including construction, modification, operation, and maintenance of on-base facilities and infrastructure.
- Off-base elements of the GBSD deployment, including updating MAFs and LFs to completely refurbished condition, establishing new utility corridors, utility work within existing utility corridors and easements, constructing new communication towers, and deploying and maintaining the GBSD weapon system.
- Decommissioning and disposing of the MMIII weapon system.

Table 2 outlines which of the elements of the proposed action would be implemented at each installation and a detailed discussion follows the table. All three elements would be implemented at F.E. Warren, Malmstrom, and Minot AFBs. Hill AFB would provide support facilities and MMIII decommissioning activities; Camp Guernsey would provide on-base training and support activities; and UTTR and Camp Navajo would support storing and demilitarizing MMIII missiles. To simplify discussion and analysis, this Opinion groups F.E. Warren AFB and Camp Guernsey in Wyoming and Hill AFB and UTTR in Utah together instead of discussing each of the four facilities individually (**Appendix B**, **Figure 1**).

Elements that would be implemented at Camp Navajo in Bellemont, AZ, would occur in existing areas and facilities. No infrastructure upgrades or additional activities are proposed outside the installation's normal operating procedures. As such, elements at Camp Navajo have been determined to have no effect on listed species, their critical habitat, or candidate species. Therefore, elements at Camp Navajo are not discussed further.

Table 2. Elements of the Project at Each Installation

Location	On-base elements of GBSD weapon system deployment	Off-base elements of GBSD weapon system deployment	Decommissioning and disposal of MMIII weapon system
F.E. Warren AFB	□	□	□
Malmstrom AFB	□	□	□
Minot AFB	□	□	□
Hill AFB	□		□
UTTR	□		□
Camp Guernsey	□		
Camp Navajo			□

GBSD system deployment and MMIII disposal activities are projected to begin in late 2023, starting at F.E. Warren AFB, then at Malmstrom AFB, and finally at Minot AFB. Activities at F.E. Warren, Malmstrom, and Minot AFBs and throughout their missile fields would be implemented in phases, either concurrently or consecutively. However, the USAF would, at all times, maintain its warfighter commitment and nuclear readiness posture. Deployment of the GBSD weapon system would be completed by the mid-2030s, and GBSD would remain viable until at least 2075.

Description of Missile Alert Facilities and Launch Facilities

The 90th Missile Wing (MW) at F.E. Warren AFB, the 341st MW at Malmstrom AFB, and the 91st MW at Minot AFB each operates and maintains 15 MAFs and 150 MMIII LFs. Each MW consists of three missile operation squadrons, each charged with overseeing five MAFs and 50 LFs. Each MAF is staffed by two officers with primary control and responsibility for 10 LFs. Each MAF has a helicopter landing pad, radio tower, high-frequency antenna, vehicle garage, fuel storage facilities, emergency backup generator and batteries, recreational facilities, and a wastewater treatment system (**Appendix B**, **Figures 2 and 3)**. Except for the helicopter landing pad, aboveground tanks for helicopter fuel, and the wastewater treatment system, the site is secured by perimeter fencing and security personnel. About a dozen airmen and officers are assigned to each MAF; however, the number of personnel varies based on daily operations, and sometimes more than 20 people can be living at a MAF at any given time.

Each MAF site consists of an underground hardened Launch Control Center (LCC) and an aboveground MAF connected by an elevator. The LCC is comprised of the following two components: the mission control center and the launch control equipment building. The underground LCC contains the command-and-control equipment for missile operations at the LFs and is designed to provide maximum protection for the officers and equipment vital to missile launch. All 50 LFs within the squadron can be monitored and commanded from each LCC, if necessary.

An LF, also known as a “missile silo”, consists of an underground vertical cylindrical structure with blast doors for storing and launching ICBMs (**Appendix B**, **Figures 4 and 5)**; an LF

support building; and two equipment rooms housing heating, ventilation, and air conditioning equipment and a backup generator. LFs also contain an underground storage tank for diesel fuel, backup generators, and backup batteries. LFs are positioned evenly throughout the missile fields, and each one is connected to a MAF. LFs at F.E. Warren AFB also have a topside building and vary in configuration from those at Malmstrom and Minot AFBs.

Description of the MMIII Decommissioning and Disposal Process

Decommissioning, or demilitarization, is the act of deactivating and destroying the military offensive or defensive advantages inherent in certain types of equipment or materiel. The terms encompass the removal from service of the MMIII ICBM and the scrapping, melting, burning, demolishing, and altering of all its parts and components to prevent further use of the MMIII weapon system and its components for their originally intended purpose. This process can be applied to serviceable, unserviceable, used, or unused items that are excess, obsolete, or not economically repairable. Demilitarization can include cutting up the system, resulting in scrap metal; rendering classified material incapable of disclosing its classified characteristics; or performing render-safe procedures on ordnance so it can be properly disposed of.

The MMIII decommissioning and disposal process would encompass facilities as well as missiles. Demilitarizing and disposing of facilities would include removing MMIII-related technology and support equipment from the MAFs and LFs; transporting debris and materials to F.E. Warren AFB, Malmstrom AFB, or Minot AFB; and sorting, declassifying, and disposing of materials based on standardized protocols. Each of the GBSD deployment and support locations would perform the carefully established steps of the MMIII ICBM demilitarization and disposal process for which it is responsible. These steps would include any or all of the following:

1. Missile removal at an individual LF.
2. Booster temporary storage at F.E. Warren, Malmstrom, or Minot AFB.
3. Booster disassembly at Hill AFB, UTTR, or a contractor facility.
4. Booster and motor storage at Hill AFB, UTTR, Camp Navajo, or a contractor facility.
5. Motor disposal at UTTR or a contractor facility.

After the booster is removed from the installation, it would be (1) placed into storage and subsequently transported, as necessary, for disassembly; (2) disassembled with the motors placed into short- or long-term storage; or (3) disassembled with motors sent directly to UTTR for disposal.

It is possible that boosters, motors, and other components would be transported for reclamation or disposal to other locations, including other installations or contractor sites; however, it is anticipated that reclaiming or disposing of those components under the proposed action would be in alignment with those sites' current missions and functions and would fit within the existing operational envelope of those locations. No additional facilities or substantive changes in operations had been identified or programmed at those locations at this. No additional facilities or personnel have been identified, and no other construction is proposed. Therefore, those activities and locations have not been carried forward for detailed evaluation.

F.E. Warren AFB and Camp Guernsey

The proposed action includes construction of on-base facilities, additional personnel, and missile maintenance and security operations at F.E. Warren AFB and Camp Guernsey. It also includes off-base construction activities at the MAFs and LFs, establishment of new utility corridors between the base and selected MAFs and LFs, utility work within the existing utility corridors and easements, constructing communication towers, and deployment of GBSD ICBMs throughout the F.E. Warren AFB missile field.

On-Base Elements of the GBSD Deployment: The proposed action includes construction and renovation of facilities, additional personnel, and missile maintenance, training, and security operations at F.E. Warren AFB. It also includes construction and renovation of facilities and additional training operations at Camp Guernsey.

Construction: Table 3 lists the proposed on-base facility and infrastructure improvements at F.E. Warren AFB and Camp Guernsey, and **Appendix B**, **Figure 6** shows the location of each improvement project and potential areas of construction. The project includes construction of 11 facilities and multiplexes at F.E. Warren AFB, which would include operational, training, security, storage, and maintenance facilities to support the GBSD program and a retention pond. All necessary parking would be integrated into the site layout and design of the facilities and areas. In addition, the project includes constructing a Security Forces Tactics Trainer and a Transporter Storage Facility at Camp Guernsey, specifically geared toward the GBSD program and weapon system. Three different locations at F.E. Warren AFB are being considered for a

Maintenance Training Facility, one that would require new construction and two others that would involve conversion of either the existing Uniform 1 (U-1) facility or the existing Uniform 2 (U-2) facility. The facilities would be either sited as indicated or sited within the potential construction areas shown on **Appendix B**, **Figure 6**. On-base construction of each facility would take 1–2 years and up to 10 years to complete all facilities. As the planning and design are more developed at F.E. Warren AFB than the other installations, the projected years of construction have been provided.

The project includes renovating an existing indoor space on-base to create the Program Integration Office/ Program Management Office (PIO/PMO) and to provide an administrative base for construction projects. In addition, the LF Trainer Facility would be updated to support GBSD missile training. Temporary office and administrative space, likely office trailers, would be established on-base to support phased increases in personnel during the transition from the MMIII program to the GBSD program. The exact location of the facilities was unknown at the time this BA was being prepared; however, they would be placed in a common, centralized location on a previously disturbed site (e.g., an existing parking lot or other previously disturbed open space).

Electrical, water, communication, and other traditional utility requirements for support of the proposed on-base facilities are expected to fit within the existing services provided to the two at the time the BA was being prepared, the on-base utility corridors proposed to directly support the MAFs and LFs are shown in **Appendix B**, **Figure 6**. These corridors would connect directly to

Table 3. On-Base Construction at F.E. Warren AFB and Camp Guernsey

Project	Description	Footprint area (sq ft)	Projected Years of Construction
F.E. Warren AFB			
Integrated Command Center	High-security facility and operations center for security, cybersecurity, and other functions.	51,000	2023 - 2025
Integrated Training Complex	Complex for missile operations and maintenance training and for SF field training.	80,000	2024 - 2027
Consolidated Maintenance Facility	Facility for squadron offices, codes vault, and storage for missile and LF maintenance crews. Complex includes transporter erector (TE) test facility and an equipment and tool storage facility.	148,424	2025 - 2028
Missile-Handling Administrative Building	Administrative facility to support the Missile-Handling and Storage Facility.	4,400	2023
Missile-Handling and Storage Facility	Facility with explosive safety setbacks required to store and transfer missile components to and from specialized vehicles.	25,000	2023
PSRE Storage Facility	PSRE storage facility to support the Missile-Handling Administrative Building.	5,000	2023
Transporter Storage Facility	Building for storing TEs, support vehicles, and equipment.	22,000	2023 - 2024
Field Depot	Facility for infrastructure maintenance teams to work on LFs. Depot also includes equipment and work vehicle storage.	5,000	2030 - 2032
2 SF Tactics Trainers	Facilities to simulate a half-hole LF for security training purposes. Two options being considered.	2,000	2023 - 2025
Operations Group Facility	Administrative facility for 90 MW's three squadrons of launch officers and their leadership.	48,000	2027 - 2030
Airman Leadership School[a]	Building 326 is being renovated to support relocation of the Airman Leadership School from Building 834	20,000	2023
Program Integration Office/ Program Management Office (PIO/ PMO)[a]	Temporary use of existing space for setup and preparation for GBSD program-associated construction.	20,000	2023
Maintenance Training Facility	Option 1[b]—U-2 facility converted into a facility used to train technicians in aspects of maintaining missiles in the on-base LF.	-	2024
	Option 2[a, b]—U-1 facility converted into a facility used to train technicians in aspects of maintaining missiles in the on-base LF.	-	
	Option 3[b]—Facility to train technicians in aspects of maintaining missiles, equipment, and infrastructure in the on-base LF.	2,000	
Camp Guernsey			
Transporter Storage Facility	Building for storing vehicles other than TEs.	20,000	2030 - 2031
SF Tactics Trainer	Facility to simulate a half-hole LF for security training purposes.	2,000	2024 - 2026

[a] Renovation of existing facilities.
[b] Optional projects to meet the need for a single Maintenance Training Facility.

the off- base utility corridors. Siting of the proposed on-base utility corridors is based on the best information available at the time this BA was being prepared. In the final design stages, the USAF anticipates that their locations might vary from those shown. To refine the siting of the on-base utility corridors, the selection guidelines for off-base utility corridors would be applied.

Although the majority of on-base elements would be in areas being used for similar purposes, limited traditional utility connections in addition to those supporting the MAFs and LFs would be required. Trenching for new utilities or rerouting of existing utilities would be conducted based on site-specific layouts and would primarily occur in already-disturbed areas with pavement, maintained open space (i.e., grassy medians or other open areas), or existing buildings. Backup generators would be installed at facilities on a case-by-case basis.

Operations: The level of operations and missile maintenance activities at F.E. Warren AFB, including the overhaul, upgrading, and rebuilding of parts, assemblies, or subassemblies and the testing and reclamation of equipment, would gradually decline as the aging MMIII program is phased out and the more modern GBSD program is deployed. Migrating to the new, more modular GBSD weapon system would ultimately reduce the level of the USAF's overall missile maintenance activity at the installation. In general, personnel associated with the MMIII program would transition to the GBSD program as it is deployed. Approximately 350 additional personnel would be required during the peak year when both programs would be operating simultaneously. Ultimately, however, there would be a reduction of approximately 80 personnel at F.E. Warren AFB once the proposed action was fully implemented. Those numbers represent a mix of civilian and military USAF personnel. No missile maintenance activities are currently conducted or would be conducted at Camp Guernsey, and there would be no change in the number of personnel at that installation.

Off-Base Elements of the GBSD Deployment Construction: Off-base elements include construction and modernization activities at the 90 MW MAFs and LFs and the establishment of new utility corridors between the base and selected MAFs and LFs. A workforce hub and centralized laydown areas would be temporarily established to help support the off-base construction activities. The number of personnel would remain unchanged throughout the missile field, and the level of missile maintenance activities would remain similar to, but slightly less than, existing conditions. All required federal, state, and local permits would be obtained before any construction site activities begin.

MAF Demolition and Launch Center and Communication Support Building Construction. The project includes the demolition, reconstruction, and construction necessary to prepare all 15 MAFs to accommodate the GBSD weapon system. This would include (1) dismantling and removing all MMIII equipment, supplies, components, and infrastructure at the MAFs not suitable for use with the GBSD weapon system and (2) reinstalling any of those materials that are usable for the GBSD program supplemented with the installation of any new materials necessary to fully support the new program. Prior to reconstruction, the USAF would construct a communication support building (CSB) at each MAF site. A launch center (LC) would be constructed at each of eight of the existing MAF sites, and the remaining seven MAF sites would be decommissioned and razed. Construction of the CSBs and LCs would be confined to areas within the existing property boundaries; however, a 1-acre temporary easement would be

acquired to accommodate storage of construction materials and equipment for each site. Construction of CSBs and conversion of the eight MAFs to LCs in the F.E. Warren AFB missile field would take 3–5 years. After reconstruction, CSB-associated structures, such as buildings or utility connections, would be removed on a case-by-case basis and disturbed areas would be reseeded and restored, as appropriate.

LF Reconstruction. The project includes the demolition, reconstruction, and construction necessary to prepare all 150 LFs to accommodate the GBSD weapon system. This would include (1) dismantling and removing MMIII equipment, supplies, components, and infrastructure at the LFs not suitable for use with the GBSD weapon system, (2) abatement of hazardous materials (e.g., asbestos, asbestos-containing materials [ACMs], lead based paint, or Polychlorinated biphenlys [PCBs]), and (3) installing equipment, supplies, components, and infrastructure necessary to support the GBSD program. Reconstructed LFs would be confined to areas within the property boundaries; however, an approximately one-acre easement would be acquired to accommodate temporary storage of construction materials and equipment for each site.

Utility Corridors. The project includes establishing approximately 910 miles of new utility corridors throughout the F.E. Warren AFB missile field in Colorado, Nebraska, and Wyoming, for which the government would acquire the necessary property easements (**Appendix B**, **Figure 7**). The new corridors would supplement the existing utility connections to the proposed LCs and the LFs. The utility corridors would be cleared and grubbed to provide access to the area for installing and maintaining erosion control devices and installing the utility lines. Upon completion of the corridors, disturbed areas would be reseeded and restored, as appropriate. Constructing the new utility corridors at F.E. Warren AFB would take 2–5 years.

The utilities would be installed in a 25- to 100-ft-wide temporary construction easement and maintained in a 16.5-ft permanent easement. The actual construction corridor would be predominately 25 feet, but would be wider than 25 ft in some locations to accommodate equipment maneuvering, overnight parking, and material storage. The 25-ft corridor would be maintained wherever feasible, especially in and around sensitive resources (e.g., wetlands, water crossings, sensitive habitat, and cultural resources). Temporary construction easements would be sized locally to accommodate access and to provide temporary equipment and spoils storage. The utility trench would have a typical depth of 4–8 ft with a finished footprint approximately 2 ft wide. Directional drilling would be used as needed to install utility lines beneath roadways and stream crossings and near sensitive environmental resources. In cases in which directional drilling is required, the width of the easement and depth of the trench would depend upon the obstacle being avoided; additional temporary easements or workspace might be acquired. In addition, new utilities to support the GBSD weapon system might be installed on aboveground infrastructure (e.g., utility poles) along the same routes as the proposed new utility corridors.

The project would require the USAF to acquire up to 100-ft temporary construction easements in addition to 16.5-ft permanent easements to facilitate the installation, operation, and maintenance of the proposed utility corridors. There would be no aboveground permanent infrastructure within these easements. Easements and GBSD proposed utility corridors would be established within previously disturbed lands to the maximum extent possible using existing rights-of-way (ROWs) where feasible, and construction corridors would be topographically restored and

reseeded after utility installation. The USAF would arrange for contractual real estate transactions with individual landowners who would be fully compensated for the acquired easements. If access is not granted by the property owner and the USAF is unable to "construct around" the property, the government may employ the use of eminent domain (i.e., the compulsory acquisition of private property for public use) to secure the necessary land access and property rights.

The project includes a suite of utility installation, topsoil preservation, and wetland and waterbody preparation techniques to account for land use, terrain, stream flow conditions, subsurface conditions, and sensitive resources that may need to be traversed or avoided (**Table 4**). The preparation and installation methods used at wetland and waterbody crossings would be implemented on a case-by-case basis in coordination with the USACE and the states through the Clean Water Act (CWA) Section 404 and 401 permitting processes. Impacts on intermittent and ephemeral streams by open cut construction techniques can be reduced or eliminated by timing the work to coincide with dry periods when there is no flow in the streams.

Because of the limited size of the proposed utility line, directional drilling would normally include a single pass between the entry and exit holes. To avoid impacts on the ground surface, waterbody, riparian areas, and any other sensitive resources, the areas between holes would generally not be disturbed. Small amounts of drilling fluids, usually a slurry of bentonite clay and water, would be used to remove the drill cuttings and advance and stabilize the drilled hole. In general, the drilling fluids would remain completely contained within the mini- or midi-directional drilling equipment and would periodically be hauled off-site and disposed of at an approved disposal facility in accordance with all applicable federal and state regulations.

The construction contractor would maintain adequate pump volumes, ideal drilling fluid properties, and appropriate penetration rates to provide proper drilling fluid circulation. If drilling fluid were to be inadvertently released or spilled, the operation would be temporarily stopped and appropriate clean-up and recovery procedures would be implemented.

Vehicular access would be required to the MAFs, LFs, proposed towers, utility installation locations, and other sites that may involve temporarily crossing drainages or streams with flowing water. Access roads would be constructed, and existing roads improved as needed. Some access roads would be permanent, closed to the public, and maintained throughout the life of the facilities. Once construction was complete, temporary access roads would be removed, and the affected area would be restored to its pre-construction condition. **Table 5** outlines methods of waterbody crossings for access roads. The method ultimately chosen would minimize disruption of natural drainage patterns, and if removed, the original contouring would be restored. Impacts to intermittent and ephemeral drainages by access road construction and use can be reduced or eliminated by timing the work to coincide with dry periods when there is no flow in the drainage. On federally managed lands, the USAF would consult with the managing agency regarding relevant standards pertaining to road crossing methods, including site assessment, design, installation, maintenance, and decommissioning.

Table 4. Suite of Preparation and Utility Installation Methods

Installation/ Preparation Method	Common Implementation Conditions										
	Standard installation	Deep installation	Mid-depth installation	Shallow installation	Ideal surface conditions	Perennial streams	Intermittent streams	Ephemeral streams	Wetlands	Avoidance of sensitive resources	Belowground installation not
Trenching	☐	☐	☐	☐			☐	☐			
Horizontal Directional Drilling or Jack and Bore						☐			☐	☐	
Knifing/ Ploughing	☐	☐	☐	☐	☐		☐	☐			
Aboveground Installation	☐					☐	☐	☐	☐	☐	☐
Deep Tilling	☐	☐	☐	☐			☐	☐			
Dam and Pump						☐	☐				
Fluming						☐	☐				

Installation Method	Description
Trenching	A moderately invasive, open-cut installation technique where a narrow trench is excavated with a backhoe or a trenching machine. The trenched material would temporarily be sidecast, then backfilled once the utility was installed.
Directional Drilling or Jack and Bore	Minimally invasive installation technique where a drill is launched from one end of a bore path and retrieved at the other, taking place with no surface disturbance between the launch and retrieving points. Directional drilling or jack and bore would be used to install utility lines beneath roadways, stream crossings or near sensitive environmental resources.
Knifing/ Ploughing	A minimally invasive, open-cut installation technique involving tracked or wheeled equipment with a hollow blade attachment which vibrates at a high rate of speed while placing the utility at a desired depth. Limited surface disturbance would occur with this technique, commonly in conjunction with deep tilling.
Aboveground Installation	A minimally invasive installation technique where the utility might be installed on new or existing aboveground infrastructure (e.g., utility poles, bridges, or other conduits).
Preparation Method	**Description**
Topsoil Segregation	A technique used to eliminate degradation of the quality of agricultural land by construction activities. Topsoil is stripped from the construction corridor and stockpiled on one side of the corridor. Once construction is complete, the topsoil is spread over the corridor. This prevents mixing of topsoil with subsoil and topsoil compaction, both of which are detrimental to soil quality.

Deep Tilling	A moderately invasive preparation technique where tracked equipment pulls heavy steel teeth/blades to preparing, loosen, or break up hardened surface soil for knifing or plowing.
Dam and Pump	A moderately invasive preparation technique in which a stream or small river is dammed, and water is pumped or transferred downstream, bypassing the construction site by means of a temporary hose or pipe.
Fluming	A moderately invasive preparation technique where a stream is dammed and a culvert or headgate is installed to allow water to be transferred downstream, bypassing the construction site. Sandbags, plastic sheeting, or similar diversion structures may be used to divert stream flow through the flume hose or pipe.

Table 5. Waterbody Crossings Methods and Descriptions

Crossing Methods	**Common Implementation Conditions**				
	Perennial stream crossing	**Intermittent stream crossing**	**Ephemeral stream crossing**	**Waterbody crossing with riparian area < 50 feet**	**Waterbody crossing with riparian area > 50 feet**
Drive-Through		☐	☐	☐	
Ford	☐	☐	☐	☐	
Culvert	☐	☐	☐	☐	
Avoidance	☐				☐

Crossing Methods	**Description**
Drive-Through	Direct crossing of a channel with only minimal vegetation removal and no cut or fill needed. This is typical for much of the low-precipitation sagebrush country with rolling topography and ephemeral or intermittent streams that rarely flow with water. Matts and temporary bridges maybe used in conjunction with this method.
Ford	Crossing of a channel that includes grading and stabilization. Stream banks and approaches would be graded to allow vehicle passage and stabilized with rock or other erosion control devices. The stream bed may be reinforced with rock material to support vehicle loads, reduce erosion, and minimize sedimentation into the waterway.
Culvert	Crossing of a waterbody that includes installation of a culvert and a stable road surface established over the culvert for vehicle passage. Adjacent sediment control structures such as silt fences, check dams, rock armoring, or riprap may be necessary to reduce erosion and sedimentation.
Avoidance	Where constructing a new waterbody crossing is impractical, canals, ditches, and streams would be avoided by using existing crossings.

Siting of the proposed utility corridors is based on the best information available at the time this BA was being prepared. In the final design stages, the USAF anticipates that locations might vary from those shown in **Appendix B**, **Figure 7**. To refine the siting of the utility corridors throughout the missile field, the following selection guidelines would be implemented:

- Utility corridors would be located within or along existing utility easements and corridors wherever possible.
- Utility corridors located along existing roadways would be sited in accordance with state and county DOT requirements and sound engineering practice.
- Utility corridors located along existing roadways would be sited as close to the roads as possible without undermining their structural integrity.
- Utility corridors not able to be located along existing roadways would be sited along the most practicable path to minimize effects on public and private property and sensitive resources in the area.
- If sensitive resources are identified near potential sites, the USAF would consider actions to avoid or minimize adverse effects to the maximum extent practicable.

Much of the GBSD proposal entails the recapitalization of existing infrastructure and reuse of existing MMIII real estate where it is currently sited. However, there are a myriad of small-scale siting avoidance and design options the USAF is proposing to ultimately employ while constructing the network of GBSD utilities corridors. Measures such as deviating (boxing around) or directionally drilling under sensitive resources represent micro-site alternatives that would ultimately be employed as part of the proposed action to limit impacts. These measures accommodating utilities corridor adjustments are a part of the proposed action and are factored into the BA and considered within the effects analysis.

The project also includes the potential to conduct activities within the 1,611 miles of existing utility corridors and easements throughout the F.E. Warren AFB missile field in Colorado, Nebraska, and Wyoming (**Appendix B**, **Figure 7**). Activities would be similar to those that would occur within the proposed new utility corridors, including clearing and grubbing to provide access to the area for installation and maintenance of erosion control devices and removal, replacement, and addition of supplemental utility components. As with the proposed new corridors, a 25- to100-ft temporary easement would be acquired for trenching and other construction activities along the existing corridors. Activities conducted within the existing easements would be in alignment with existing easement grants in place and might include ingress; egress; construction; maintenance; and repair, replacement, and removal of utility lines, junction boxes, manholes, and other appurtenances, as necessary. Upon completion, disturbed areas would be reseeded and restored, as appropriate.

Communication Towers. The project includes establishing 18 communication towers on newly acquired property throughout the F.E. Warren AFB missile field (**Appendix B**, **Figure 7**). The towers would be 300 ft tall with guy wires and lighted in accordance with Federal Aviation Administration (FAA) requirements. Each tower site would be up to 5 acres of which approximately 1 acre would be cleared and grubbed to provide access to the site for construction and maintenance activities for the tower, tower anchor points, support building, utility access, and access road. All tower sites would require a maintenance access road and utility line from the nearest electric utility access point. During construction, the entire five-acre site would be used

for material staging, equipment and vehicle parking, and construction of the tower, guy wire anchors, and security fencing.

Concrete pads and supporting infrastructure would be installed. Trenches would be excavated from the nearest utility connection point to the proposed towers. Directional drilling would be used as needed to install utility lines beneath roadways and stream crossings and near sensitive environmental resources to support tower construction and operation. Upon completion of the communication towers and access roads, disturbed areas would be reseeded or covered with gravel, as appropriate. Construction of the towers in the F.E. Warren AFB missile field would require 2– 5 years, with each tower requiring 6–12 months.

The locations of the communication towers shown in **Appendix B**, **Figure 7** are based on the best available information at the time this BA was prepared and have been carried forward for detailed analysis. In addition to the proposed new towers, communication equipment also might be installed on existing towers, buildings, or other suitable structures to meet coverage requirements. They would be specifically chosen to allow communication equipment to be installed with no appreciable change to the existing structures.

Workforce Hub and Laydown Areas. A temporary centralized hub containing living quarters, a cafeteria, a central medical facility, training areas, a central transport facility, construction offices, and utility service areas would be established in or near Kimball, NE with construction beginning in 2024 (**Appendix B**, **Figure 8**). The hub would be 50 to 60 acres and typically house 2,000 construction workers and support personnel during the construction phase of the proposed action, with as many as 3,000 individuals during peak periods. It would provide primarily barracks-style modular housing for the workers in the missile field and include food services, recreational facilities, and support services staff quarters. It would also contain an administrative and training area and substantial parking facilities. It would be fully self-supporting with its own water, wastewater treatment, and other utilities and would remain in place for 2–5 years during construction. Upon completion of the off-base elements of the project, the site of the workforce hub would be returned to the condition agreed upon with local stakeholders. Common areas would be transferred to the community, or the hub would be removed, and disturbed areas would be reseeded and restored, as appropriate.

Because of the limited amount of on-site material storage area at sites throughout the missile field, four temporary laydown areas would be established for storing bulk materials and equipment to support construction. Each laydown area would be approximately 10–15 acres near highways and other access roads and strategically located to minimize travel times to and from construction sites throughout the missile field. Each area would contain a warehouseman office, a satellite medical area, indoor controlled and outdoor material staging areas, a heavy equipment maintenance area, light-duty equipment and demolition material staging areas, a water distribution well for the construction sites, a fuel distribution area, and a construction component preassembly area. Up to 181,000 cubic yards of concrete would be required for the reconstruction of the MAFs and LFs, equating to approximately 11 to 12 truckloads per day over the 5-year construction period. It is expected the concrete would be locally sourced; however, laydown areas might have a mobile concrete batch plant to supplement local concrete suppliers.

All aggregate would be supplied by existing permitted borrow pits in the region. The laydown sites would remain in place for 2–5 years during construction.

The municipalities near which the workforce hub and laydown areas are shown in **Appendix B**, **Figure 8** were selected based on the best available information; however, their exact locations were unknown at the time this BA was prepared. In the final design stages, the USAF anticipates that locations might vary from those shown in the figure. To refine the siting of the workforce hub and laydown areas, the following selection guidelines would be implemented:

- The USAF and any contractors would coordinate with city and county officials before selecting sites for the temporary facilities and obtain permits as necessary to meet all local zoning requirements.
- The temporary workforce hub and laydown areas would be in full compliance with local planning requirements and plans.
- The temporary workforce hub and laydown areas would not be sited in areas supporting sensitive resources.
- Temporary workforce hub and laydown area staffs would prepare and maintain site-specific public Health and Safety Plans that outline policies and protocols for complying with all applicable health and safety requirements, reducing vehicle accidents, and ensuring the safe and orderly functioning of the facility.
- Public health and safety briefings would be conducted as part of the hiring process and periodically conducted as part of the daily safety briefings.
- Temporary workforce hub and laydown area staffs would prepare and maintain written security policies and protocols, which would include hiring of on-site security personnel and direct communication with local law enforcement, as necessary.
- Screen potential employees for violent crimes or sexual offences convictions.
- Temporary workforce hub and laydown area staffs and occupants would comply with all local ordinances (e.g., noise).
- Following the GBSD deployment construction phase and in coordination with the local cities and towns, workforce hub and laydown areas would be closed, removed, and restored once they are no longer needed.
- The workforce hub would be established in accordance with Occupational Safety and Health Standards (Title 29 of the *Code of Federal Regulations* [CFR] § 1910.142, *Temporary Labor Camps*).

In addition, the workforce hub and laydown areas would meet the following requirements, wherever possible. Temporary workforce hub and laydown areas:

- Would not be collocated with or adjacent to residential neighborhoods, schools, churches, parks, historic buildings or sites, or other sensitive viewing areas.
- Would be located to provide direct access to major highways and primary roadways suitable for the additional construction traffic, and traffic routes would be established, as necessary, to avoid downtown areas.
- Would be sited near or adjacent to existing utility infrastructure (e.g., water, sewer, waste, power, and communication systems), if practical, and in alignment with other selection guidelines.
- Would include sanitary support infrastructure that would meet all local, county, and state regulations.

In addition, conservation measures outlined below would be implemented during construction activities while establishing and operating the workforce hub and laydown areas.

Operations: The level and nature of operations and maintenance activity supporting the GBSD program throughout the missile field would be similar to, but somewhat less than, those supporting the MMIII program. Maintenance of the GBSD weapon system would comprise standard USAF logistics structure, directives, and procedures focused on normal supply and repair activities to sustain alert readiness. The level of activity to replace, remanufacture, repair, rebuild, and upgrade GBSD missiles and supporting systems during their service life would be similar to the level of activity for the MMIII systems, MAFs, and LFs. The GBSD modular design, however, would allow component replacements, as necessary, during maintenance activities, thereby, reducing or eliminating time and effort required in the field. All transport vehicles (e.g., PTs, TEs, and missile transporters) would be upgraded or replaced to be compatible with the heavier GBSD system. The new vehicles would be similar in size and function to the existing fleet vehicles, possibly with minor differences in length, height, and overall weight. All vehicles would be configured and permitted as necessary to meet all on-road requirements.

MMIII Decommissioning and Disposal: MMIII decommissioning and disposal processes at F.E. Warren AFB would encompass both missiles and facilities. Decommissioning and disposal of each missile would include removing the missile from the LF, transporting it to the base for temporary storage, and preparing it for transport to Hill AFB, UTTR, Camp Navajo, or a contractor facility. Decommissioning and disposal of facilities would include removing MMIII-related technology and support equipment from the MAFs and LFs; transporting the material(s) to the base; and sorting, declassifying, and disposing of them based on standardized protocols. No decommissioning or disposal activities would be conducted at Camp Guernsey.

Malmstrom AFB

The proposed action includes construction of on-base facilities, additional personnel, and missile maintenance and security operations at Malmstrom AFB. It also includes construction activities at the MAFs and LFs, establishment of new utility corridors between the base and selected MAFs and LFs, utility work within the existing utility easements and corridors, constructing communication towers, and deployment of GBSD ICBMs throughout the Malmstrom AFB missile field.

On-Base Elements of the GBSD Deployment Construction: Table 6 lists the proposed on-base facility and infrastructure improvements at Malmstrom AFB, and **Appendix B, Figure 9** shows the location of each improvement project and potential areas of construction. The project includes the construction of nine facilities and multiplexes at the base, which would include operational, training, security, storage, and maintenance facilities to support the GBSD program. The facilities would either be sited as indicated or sited within the potential construction areas shown in **Appendix B, Figure 9**. All necessary parking would be integrated into the site layout and design of the facilities and areas. On-base construction of each facility would take 1–2 years and up to 11 years to complete all facilities. As the planning and design are not as developed as

Table 6. On-Base Construction at Malmstrom AFB

Project	Description	Footprint area (sq ft)
Integrated Command Center	High-security facility and operations center for security, cybersecurity, and other functions.	51,000
Integrated Training Complex	Facility for missile operations and maintenance training and for SF field training.	80,000
Consolidated Maintenance Facility	Facility for squadron offices, codes vault, and storage for missile and LF maintenance crews. Complex includes TE test facility and an equipment and tool storage facility.	148,484
Missile-Handling Administrative Building	Administrative facility to support the Missile-Handling and Storage Facility.	4,400
Missile-Handling and Storage Facility	Facility with explosive safety setbacks required to store and transfer missile components to and from specialized vehicles.	25,000
Transporter Storage Facility	Building for storing TEs, support vehicles, and equipment.	22,000
Field Depot	Facility for infrastructure maintenance teams to work on LFs. Depot also includes equipment and work vehicle storage.	5,000
Program Integration Office [a]	Temporary use of existing space for setup and preparation for GBSD program-associated construction.	20,000
PSRE Storage Facility [a]	PSRE storage facility to support the Missile-Handling Administrative Building.	5,000
SF Tactics Trainer	Facility to simulate a half-hole LF for security training purposes.	2,000
Maintenance Training Facility Conversion [a]	Facility used to train technicians in aspects of maintaining missiles in the on- base LF.	-

[a] Renovation of existing facilities.

F.E. Warren AFB, the projected years of construction have not been provided. Other than location, utility considerations would be similar to those outlined for F.E. Warren AFB.

Operations: Other than location, the proposed operations at Malmstrom AFB would be the same as those outlined for F.E. Warren AFB. Approximately 350 additional personnel would be required during the peak year, when the MMIII and GBSD programs would be operating simultaneously. Ultimately, however, there would be a reduction of approximately 80 personnel at the installation once the project was fully implemented. Those numbers represent a mix of USAF civilian and military personnel.

Off-Base Elements of the GBSD Deployment Construction: The proposed action at Malmstrom AFB includes construction activities at the MAFs and LFs and the establishment of

new utility corridors and communication towers within the missile field similar to those described for F.E. Warren AFB.

MAF Demolition and Reconstruction, and LF Reconstruction. The project includes demolition, reconstruction, and construction necessary to transition between eight and 15 MAFs and all 150 LFs throughout the Malmstrom AFB missile field to completely refurbished condition. Other than the individual locations, the construction activities at individual MAFs and LFs, the work crew size, work schedule, number and type of laydown areas, construction of CSBs and LCs, and deployment of the GBSD weapon system would be the same as outlined for F.E. Warren AFB.

Utility Corridors and Communication Towers. The project includes establishing approximately 1,277 miles of new utility corridors for which the government would acquire the necessary property easements and ROWs, and the potential to conduct activities within the 1,750 miles of existing utility corridors and ROWs, and easements throughout the Malmstrom AFB missile field (**Appendix B, Figure 10**). In addition, the project includes establishing 31 communication towers on newly acquired property throughout the missile field (**Appendix B, Figure 10**). The towers would be 300 ft tall with guy wires and lighted in accordance with FAA requirements. Other than location, the utility corridor and communication tower elements would be the same as outlined for F.E. Warren AFB.

Workforce Hubs and Laydown Areas. Two workforce hubs would be established in or near Great Falls and Lewiston, MT (**Appendix B, Figure 11**). Eight construction laydown areas would be established in or near Augusta, Belt, Denton, Judith Gap, Lewistown, Stanford, Vaughn, and Winfred, MT. Other than location, the size, number of workers and support personnel, types of services, and time in place would be the same as outlined for F.E. Warren AFB. Unlike F.E. Warren AFB, there is currently no local supply of concrete sufficient to support the off-base construction; therefore, mobile concrete batch plants are anticipated at the laydown areas in Augusta, MT; Winfred, MT; Judith Gap, MT; Belt, MT. These would be small mobile batch plants that would generate two to three batches (i.e., truck loads) per day on average.

Utility corridors and communication towers depicted in **Appendix B, Figure 10** and the municipalities for the workforce hubs and laydown areas in **Appendix B, Figure 11** are based on the best information available at the time this BA was being prepared. To refine the siting of the utility corridors, communication towers, workforce hubs, and laydown areas, the USAF would implement the selection guidelines outlined for F.E. Warren AFB for these elements throughout the Malmstrom AFB missile field.

Operations: All transport vehicles would be upgraded or replaced to be compatible with the GBSD system. Other than location, ongoing operations and maintenance activities would be the same as outlined for F.E. Warren AFB.

MMIII Decommissioning and Disposal: Other than being conducted at Malmstrom AFB and in the missile field, the MMIII decommissioning and disposal process would be the same as outlined for F.E. Warren AFB.

Minot AFB

The proposed action includes construction of on-base facilities, additional personnel, and missile maintenance and security operations similar to those described for F.E. Warren AFB. It also includes construction activities at the MAFs and LFs, utility work within the existing utility easements and corridors, establishment of new utility corridors between the base and selected MAFs and LFs, constructing communication towers, and deployment of GBSD ICBMs throughout the Minot AFB missile field.

On-Base Elements of the GBSD Deployment Construction and Operations: Table 7 lists the proposed on-base facility and infrastructure improvements at Minot AFB, and **Appendix B, Figure 12** shows the location of each improvement project and potential areas of construction. The project includes the construction or renovation of 13 facilities and multiplexes at Minot AFB that would include operational, training, security, storage, and maintenance facilities and roadway upgrades to support the GBSD program. All necessary parking would be integrated into the site layout and design of these facilities and areas. The facilities would be either sited as indicated or sited within the potential construction areas shown on **Appendix B, Figure 12**. On-base construction of each facility would take 1–2 years and up to 11 years to complete all facilities. As the planning and design are not as developed as F.E. Warren AFB, the projected years of construction have not been provided. Other than location, the proposed operations at Minot AFB would be the same as outlined for F.E. Warren AFB.

Off-Base Elements of the GBSD Deployment Construction: The project at Minot AFB includes construction activities at the MAFs and LFs and the establishment of new utility corridors and communication towers within the missile field similar to those described for F.E. Warren AFB. A workforce hub and centralized laydown would be temporarily established to support the off-base construction activities. During operation and maintenance of the GBSD system, the number of personnel would remain unchanged throughout the missile field, and the level of missile maintenance activities would remain similar to, but be slightly less than, existing conditions.

MAF Demolition and Reconstruction, and LF Reconstruction. The project includes demolition, construction, and reconstruction necessary to transition between eight and 15 MAFs and all 150 LFs throughout the Minot AFB missile field to completely refurbished condition.

Other than location, the construction activities at individual MAFs and LFs, the size of work crews, work schedule, number and type of staging areas, the development and construction of CSBs and LCs, and the deployment of the GBSD ICBMs would be the same as outlined for F.E. Warren AFB.

Utility Corridors and Communication Towers. The project includes establishing approximately 939 miles of new utility corridors for which the government would acquire the necessary property easements and the potential to conduct utility work within the 1,531 miles of existing utility corridors and easements throughout the Minot AFB missile field (**Appendix B, Figure 13**). In addition, the project includes establishing 13 communication towers on newly acquired

Table 7. On-Base Construction at Minot AFB

Project	Description	Footprint area (sq ft)
Integrated Command Center	High-security facility and operations center for security, cybersecurity, and other functions.	51,000
Integrated Training Complex	Complex for missile operations and maintenance training and for SF field training.	80,000
Consolidated Maintenance Facility	Facility for squadron offices, codes vault, and storage for missile and LF maintenance crews. Complex includes TE test facility and an equipment and tool storage facility.	148,424
Missile-Handling Administrative Building	Administrative facility to support the Missile-Handling and Storage Facility.	4,400
Missile-Handling and Storage Facility	Facility with explosive safety setbacks required to store and transfer missile components to and from specialized vehicles.	25,000
Transporter Storage Facility	Building for storing vehicles other than TEs.	22,000
SF Tactics Trainer	Facility to simulate a half-hole LF for security training purposes.	4,000
Operations Group Facility	Administrative facility for the 91 MW's three squadrons of launch officers and their leadership.	34,600
Maintenance Training Facility Conversion [a]	Facility used to train technicians in aspects of maintaining missiles in the on-base LF.	-
SF Complex	Administrative facilities, dispatch area, and armory for missile field SF.	60,000
Vehicle Maintenance Complex	Several facilities to provide additional areas to maintain vehicles on-base.	41,000
Program Integration Office [a]	Temporary use of existing space for setup and preparation for GBSD program-associated construction.	20,000
Field Depot [a]	Facility for infrastructure maintenance teams to work on LFs. Depot also includes equipment and work vehicle storage.	5,000
PSRE Storage Facility [a]	PSRE storage facility to support the Missile-Handling Administrative Building.	5,000
RS/RV Maintenance Facility [a]	Nuclear-certified maintenance facility where warheads are maintained and prepped for installation on missiles in the field.	23,490
Roadway Upgrades	Chopper Path extended past Peacekeeper Place to intersect a new road connecting Bomber Boulevard and Tanker Trail.	-

[a] Renovation of existing facilities.

property throughout the missile field (**Appendix B, Figure 13**). The towers would be 300 ft tall with guy wires and lighted in accordance with FAA requirements. Other than location, the utility corridor and communication tower elements would be the same as outlined for F.E. Warren AFB. Unlike F.E. Warren AFB, there is currently no local supply of concrete sufficient to support the off-base construction; therefore, a mobile concrete batch plant is anticipated at the laydown area in Bowbells, ND. This would be a small mobile batch plant that would generate five or more batches (i.e., truck loads) per day on average.

Workforce Hub and Laydown Areas. A workforce hub would be established in or near Minot, ND, and seven centralized construction laydown areas would be established in or near Balfour, Bowbells, Garrison, Mohall, Ruso, Stanley, and Wabek, ND (**Appendix B, Figure 14**). Other than location, the size, number of workers and support personnel, types of services, and time in place would be the same as outlined for F.E. Warren AFB.

Operations: The nature and overall level of operations and maintenance activities for the GBSD system would be similar to, but slightly lower than, existing conditions throughout the Minot AFB missile field. All transport vehicles (e.g., PTs, TEs, and missile transporters) would be upgraded or replaced to be compatible with the GBSD system. Other than location, ongoing operations and maintenance activities would be the same as outlined for F.E. Warren AFB.

MMIII Decommissioning and Disposal: Other than being conducted at Minot AFB and in the missile field, the MMIII decommissioning and disposal process would be the same as outlined for F.E. Warren AFB.

Hill AFB and UTTR

The proposed action includes construction and renovation of on-base facilities; additional personnel; and additional missile storage, maintenance, and training; and MMIII decommissioning and disposal activities at Hill AFB. It also includes an increase in missile storage and MMIII decommissioning and disposal activities at UTTR.

On-Base Elements of the GBSD Deployment Construction: Table 8 lists the proposed on-base facilities and infrastructure improvements at Hill AFB and UTTR. Appendix B, Figure 15 and 16 and show the location of each improvement project and potential areas of construction. All necessary parking would be integrated into the site layout and design of these facilities and areas. The project includes the construction of eight storage igloos each at Hill AFB within its munitions storage area (MSA) and UTTR within its missile storage area The igloos would be eight-bay, temperature-controlled, earth-covered magazines for missile storage. Each would store up to 16 boosters and would have elevated floors to enable missile transporter vehicles to easily load and offload. On-base construction of each facility would take 1–2 years and up to 8 years to complete all facilities. Appendix B, Figure 16 shows the location of each improvement project and potential areas of construction. All necessary parking would be integrated into the site layout and design of these facilities and areas. The project includes the construction of eight storage igloos each at Hill AFB within its munitions storage area (MSA) and UTTR within its missile storage area The igloos would be eight-bay, temperature-controlled, earth-covered magazines for missile storage. Each would store up to 16 boosters and would have elevated floors to enable missile transporter vehicles

Table 8. On-Base Construction at Hill AFB and UTTR

Project	Description	Footprint area (sq ft)
Hill AFB		
Storage Igloos	Eight-bay, temperature-controlled, earth-covered magazines for missile storage. Each would store up to 16 boosters and have elevated floors to enable missile transporter vehicles to load and offload.	92,000
After Modification Launch Facility[a]	Conversion of the A-Modified Launch Facility to support the GBSD program	2,000
B-System Launch Facility[a]	Conversion of the B-Side Launch Facility to support the GBSD program	2,000
Strategic Missile Integration Complex– Launch Facility[a]	The MMIII MAFs and LFs would be converted to the GBSD configuration providing system test and anomaly investigations, prototype development and checkout, testing for weapon system and software, ICBM acquisitions integration testing, and launch simulations.	3,000
UTTR		
Storage Igloos	Eight, temperature-controlled, earth-covered magazines for missile storage. Each would store up to 16 boosters and have elevated floors to enable missile transporter vehicles to load and offload.	128,700

to easily load and offload. On-base construction of each facility would take 1–2 years and up to 8 years to complete all facilities.

As with F.E. Warren AFB, utility requirements for the proposed facilities are expected to fit within the existing services provided to the two installations and no major utility upgrades had been identified at the time this BA was being prepared. Although the majority of on-base elements would be in areas being used for similar purposes, limited additional utility connections would be required. Other than location, utility considerations would be similar to those outlined for F.E. Warren AFB.

Operations: The level of decommissioning and disposal operations and of missile maintenance activities at Hill AFB and UTTR, including the overhaul, upgrading, and rebuilding of parts, assemblies, or subassemblies and the testing and reclamation of equipment, would slowly decrease as the aging MMIII program was phased out and the GBSD program was deployed. In general, personnel associated with the MMIII program would transition to the GBSD program.

Approximately 278 additional primarily civilian personnel would be required at Hill AFB once the project was fully implemented. There would be no change in the number of personnel at UTTR.

MMIII Decommissioning and Disposal: In general, boosters, motors, and nonmotor components could be stored at Hill AFB, UTTR, or a contractor facility until scheduled for disassembly,

disposal, or demilitarization. Missile disassembly and motor storage are typical processes conducted regularly at Hill AFB. After disassembly, individual motors would be transported to a storage facility on-base, to UTTR for disposal, to Camp Navajo for storage, or to a contractor facility for reclamation. Once at UTTR, motors would be taken to the thermal treatment unit (TTU) for disposal.

The three disposal sites at the TTU include rocket motor and bulk propellant open burn pads, and open burn/open detonation staging and treatment pads. Perimeter fences, cliffs, and other mountainous terrain restrict public access. The area is undeveloped with no supporting utilities. The only man-made features are the three disposal sites and associated roadways, fences, and fire breaks.

On average, two to three motors per week would be destroyed. This increase in disposal activities would coincide with the three 3–5-year periods during which the MMIII missiles would be removed from the F.E. Warren AFB, Malmstrom AFB, and Minot AFB missile fields.

General Biological Conservation Measures

The following general conservation measures are actions that would be implemented during project design (i.e., site selection), construction, operations, or maintenance activities as applicable to avoid or minimize effects of the project on resources. The level of effects presented in this BA incorporates the implementation of these measures and their minimizing effects on consequences to federally listed species and critical habitat. These measures are general in nature and would avoid or minimize adverse effects on all biological resources; the conservation measures that have been developed for specific ESA-listed species are presented after the general biological conservation measures.

- Refine the siting of the utility corridors throughout the missile field using the following selection guidelines during final design:
  - Locate utility corridors within or along existing utility easements and corridors or previously disturbed areas wherever possible.
  - Site utility corridors located along existing roadways in accordance with state and county department of transportation (DOT) requirements and sound engineering practice.
  - Site utility corridors located along existing roadways as close to the roads as possible without undermining their structural integrity.
  - Site utility corridors that are not able to be located along existing roadways along the most practicable path to minimize effects on public and private property and sensitive resources in the area.
  - If sensitive resources are identified near potential sites, the USAF would consider actions to avoid or minimize adverse effects to the maximum extent practicable.
- Refine the siting of the temporary workforce hub and laydown areas using the following selection guidelines during final design:
  - The USAF and any contractors would coordinate with city and county officials before selecting sites for the temporary facilities and obtain permits as necessary to meet all

local zoning requirements.
  - The temporary workforce hub and laydown areas would be sited in full compliance with local planning requirements and plans.
  - The temporary workforce hub and laydown areas would not be sited in areas supporting sensitive resources (e.g., sensitive wildlife habitat, culturally sensitive resources, or wetlands). Instead, they would be sited in previously disturbed areas whenever possible.
  - Temporary workforce hub and laydown area staffs would prepare and maintain site-specific public Health and Safety Plans (HASPs) that outline policies and protocols for complying with all applicable health and safety requirements, reducing vehicle accidents, and ensuring the safe and orderly functioning of the facility.
  - Public health and safety briefings would be conducted as part of the hiring process and periodically conducted as part of the daily safety briefings.
  - Temporary workforce hub and laydown area staffs would prepare and maintain written security policies and protocols, which would include hiring of on-site security personnel and direct communication with local law enforcement, as necessary.
  - The USAF and any contractors would screen potential employees for violent crimes or sexual offences convictions.
  - Temporary workforce hub and laydown area staffs and occupants would comply with all local ordinances (e.g., noise).
  - Following the GBSD deployment construction phase and in coordination with the local cities and towns, workforce hub and laydown areas would be repurposed, closed, removed, and restored once they are no longer needed.
  - The workforce hub would be established in accordance with Occupational Safety and Health Standards (29 CFR § 1910.142, Temporary Labor Camps).
- The temporary workforce hub and laydown areas would meet the following requirements, wherever feasible:
  - Would not be collocated, where feasible, with or adjacent to residential neighborhoods, schools, churches, parks, historic buildings or sites, or other sensitive viewing areas.
  - Would be located to provide access to major highways and primary roadways suitable for the additional construction traffic, and traffic routes would be established, as necessary, to avoid downtown areas.
  - Would be sited near or adjacent to existing utility infrastructure (e.g., water, sewer, waste, power, and communication systems), if practical, and in alignment with other selection guidelines.
  - Would include sanitary support infrastructure that would meet all local, county, and state regulations.
- The USAF would comply with all applicable Bureau of Land Management (BLM) Resource Management Plans (RMPs) (as amended) design criteria, Best Management Practices (BMPs), and mitigation requirements on BLM-managed lands.
- The USAF would comply with all applicable Forest Plan Standards and Guidelines (as amended), BMPs, and mitigation requirements on National Forest System (NFS) lands. Ground-disturbing and vegetation management activities would comply with all Agency-wide, regional, and state BMPs.
- Comply with all Agency-wide, regional, and state BMPs regarding ground-disturbing and vegetation management activities.

- All construction and reclamation activities would be monitored by inspectors approved by the applicable land management agencies, and in accordance with the mitigation and monitoring plan developed by the USAF and/or their contractor.
- The USAF would provide project crews and contractors with maps showing avoidance areas; these maps would include work zones as well as ROW areas where overland travel would be avoided.
- Segregate and store separately from the subsoil layer all topsoil that is required to be temporarily removed during construction (e.g., soil removed from the utility trench line).
- Replace all topsoil and sub-surface soils that were temporarily removed and stored during the construction process in the proper order during reclamation (i.e., subsoil in the bottom of the trench/disturbance-area and topsoil on top).
- During restoration, spread and return stored soils (subsurface soils or waste rock resulting from excavations or foundation drilling) in proximity to where the material was originally removed.
- Re-contoured temporarily disturbed areas to blend with the surrounding landscape. Re-contouring would emphasize restoration of the existing drainage patterns and landform to pre-construction conditions to the maximum extent feasible.
- Decompact soils that have become compacted during construction on a case-by-case basis using techniques and methods developed through negotiation with the landowner or land management agency.
- Conduct final cleanup of all construction areas to ensure that all areas are free of any construction debris, including, but not limited to: assembly of scrap metals, oil or other petroleum-based liquids, construction wood debris, and worker-generated litter. Permanent erosion control devices would be left in place during final cleanup.
- Adhere to specific federal and state closure periods and areas during operations and maintenance (O&M) activities; do not conduct any routine and corrective O&M activities during these timeframes to the maximum extent feasible (i.e., as reasonable while still maintain project functionality and national security). The appropriate federal or state agency would notify the USAF of any spatial or temporal restrictions that are in effect for the Project area during operation (e.g., fire restrictions) as applicable.
- Clean all earthwork equipment before arriving at the site to begin construction, operations, or maintenance activities. Clean tracks, skid plates, and other parts that can trap soil and debris at its previous off-site location.
- During operation of the Project, the USAF or its subcontractors would use existing stream crossings or new, permanent crossings that were approved as part of the Project and would not create additional crossings without prior agency permitting and approval.
- Conduct preconstruction surveys to identify sensitive biological resources as necessary, including wetlands, federal- and state-listed and proposed species, and avian nests. If sensitive biological resources are identified during surveys, actions to avoid or minimize effects on those resources would be implemented.
- Follow federal and state guidelines for conducting preconstruction surveys in areas determined to be occupied by or to contain habitat for sensitive biological resources and take precautions to avoid or minimize effects on the resources to the maximum extent feasible. This includes pre-disturbance botanical surveys for species of conservation concern for the Helena-Lewis & Clark National Forest, per USFS direction.
- Consider all wildlife and plant surveys as “casual use” activities that would not be restricted

or prevented from occurring due to overlapping season and temporal restrictions that apply to other activities (e.g., temporal restrictions on ground disturbance).

- Limit the footprint of project activities to the minimum necessary to safely construct and implement the project while minimizing the extent of vegetation that is required to be cleared. Minimize the removal of native vegetation during construction consistent with safe construction practices. Cutting shrubs at or near ground level (leaving root structures in place) to facilitate regrowth after construction.
- Use directional drilling where feasible to install utility lines beneath stream, wetlands, riparian areas, and other sensitive resources or reroute or microsite the project element to avoid the sensitive resources.
- Minimize adverse effects on sensitive biological resources to the maximum extent feasible when siting easements for temporary storage of construction materials and equipment at MAFs, LFs, utility corridors, communication towers, workforce hubs, and laydown areas by siting them in previously disturbed areas whenever possible.
- Locate new access roads to minimize the number of trees removed during construction. However, new access roads would not be relocated if the change would result in an increase in the overall disturbance (acres); require additional cut-and-fill activities; or impact other sensitive resources (e.g., sagebrush plant community, sensitive species habitat, and/or cultural resources or viewshed) if the road was moved.
- Maintain snags in place along the outer portions of each utility line's right-of-way in order to reduce the impacts on habitat for cavity nesters, where retention of these snags would not conflict with the safe implementation of the project.
- Use soil amendments (e.g., fertilizer, wood or straw mulches, tackifying agents, or soil-stabilizing emulsions) on a case-by-case basis and in compliance with the land management agency's or landowner's approval. Use only soil amendments that are non-toxic to biological resources and are certified to be weed free.
- The agency-approved Environmental Construction Inspectors would approve weed-free straw or other erosion control materials on federally managed lands prior to application.
- Limit management of woody vegetation within 50 ft of streams to mechanical techniques implemented by hand crews.
- Conduct preconstruction noxious weed surveys of areas to be directly affected by the Project, excluding under active agricultural cultivation and military installations. The purpose of these surveys is to document the presence and abundance of existing noxious weeds prior to disturbance and establish the success criteria that will be used to determine when post-construction noxious weed management activities have returned an area to preconstruction conditions related to noxious weed cover.
- Conduct preconstruction weed treatment in project areas identified as containing a high density of noxious weeds, as outlined in the weed management plan. Conduct these treatments prior to the start of ground-disturbing activities and at the time most appropriate for the target species in areas identified. Limit preconstruction weed treatment to the areas that are expected to have surface-disturbing activities. Preconstruction treatment may use mechanical control, hand spraying, grazing, or herbicides methods.
- If herbicides are required for weed control, comply with label restrictions; federal, state and/or county regulations; as well as landowner agreements related to herbicide use/applications. No spraying would occur prior to notification of the applicable land management agency or landowner. On federal or state-controlled lands, an herbicide use

plan would be submitted prior to any herbicide application as recommended in the BLM herbicide EIS (https://www.blm.gov/programs/natural-resources/weeds-and-invasives/vegetative-peis). The herbicide use plan would include the dates and locations of application, target species, herbicide, adjuvants, and application rates and methods (e.g., spot spray vs. boom spray).

- If herbicides are required for weed control, select appropriate herbicides or other chemical weed controls from the federal, state or county's list of previously approved herbicides and in accordance with any herbicide plans. If an applicable land managing agency determines that a previously approved herbicide and/or plan is unacceptable, they would notify the USAF.
- If herbicides are required for weed control, use only herbicides approved by the land managing agency as safe to use in aquatic environments and reviewed by the USAF or their subcontractors for effectiveness within 100 feet of sensitive aquatic resources.
- Do not place soil stockpiles from areas that did not have noxious weeds or invasive species present adjacent to populations of noxious weeds or invasive species. Soil stockpiles in areas containing noxious weeds and invasive plant species would be kept separate from soil removed from areas that are free of noxious weed and invasive plant species, and the soil would be replaced in or near the original excavation. If requested by the applicable land-management agency, soil stockpiles would be covered with plastic if the soil stockpile would be in place for two weeks or more and is not being actively used.
- Keep project-related storage and staging yards weed-free.
- Source straw or hay that are used to control erosion and sedimentation from certified weed-free sources.
- Rehabilitate temporarily disturbed areas as soon as feasible, following ground-disturbing activities, to preconstruction conditions. Seed mixes for revegetation would be developed and agreed to through coordination with the local office of each appropriate local land management agency (e.g., USFS and BLM), state land management agency, or landowner as applicable. Seed mixes would be certified "noxious weed free". Planted species used in the revegetation efforts should match the native species composition present in and around the site to the extent possible. At rangeland/grassland sites, seed mixes should include at least three to four grass species, targeted to the specific site. In riparian areas, the planting of willows and/or cottonwoods (if site appropriate) may be used to replace woody cover; deciduous shrubs such as currant, chokecherry, native plum, wild rose, and buffaloberry may also be considered.
- Work with land managers as well as state and local county weed departments to develop and implement a plan to assess, treat, and monitor for weeds. Conduct annual post-construction monitoring and treatment of invasive plants on closed roads (access roads dedicated for use by the Project only), temporary roads, laydown yards, and other disturbed areas for 3 years in areas where infestations or populations of noxious weeds have been identified. If after 3 years post-construction conditions are not equivalent to or better than preconstruction conditions (in accordance with applicable permit), monitoring and treatment would continue until these conditions are met. However, if adjacent unaffected land uses (i.e., uses not related to the Project) are significantly contributing to the introduction and/or persistence of invasive plant species within areas initially disturbed by the Project, then the USAF would not be required to treat noxious weeds in these areas.
- Consult with the appropriate land management agency to determine the appropriate species

of tree seedlings to be planted on federal or state lands, if the planting of tree seedlings are required by the federal or state agencies.

- Conduct a delineation of wetlands and waters of the U.S. prior to construction to support Clean Water Act (CWA) Section 404 and 401 permitting and to minimize potential effects.
- Avoid impacts on wetland and riparian areas unless physically or economically infeasible or where activities are permitted. Land management agencies' plans (e.g., RMPs, Forest Plans, etc.) that have standards, guidelines, stipulations, or avoidance buffers for wetlands would be adhered to on applicable lands.
- Submit site-specific plans and measures to mitigate impacts on wetlands and waters of the U.S. to the appropriate regulatory agency, as well as the land managing agency in instances where impacts on wetlands and waters of the U.S. are not avoidable. The USAF would obtain necessary permits prior to discharging dredged or fill material to waters of the U.S. and state.
- Submit a mitigation plan that is accepted by the U.S. Army Corps of Engineers (USACE), if required to meet USACE requirements for CWA Section 404 permitting.
- Obtain from the U.S. Environmental Protection Agency (EPA) or its designees the appropriate National Pollutant Discharge Elimination System (NPDES) permits for construction activities as required.
- Designate one or more responsible and qualified staff to manage stormwater issues, conducting the required stormwater inspections, and maintaining the appropriate records to document compliance with the terms of the Stormwater Pollution Prevention Plan (SWPPP) and NPDES permits.
- Implement the conditions in the SWPPP to minimize impacts on wetlands and waterbodies, including:
  - Install and maintain approved sediment and erosion control BMPs until disturbed areas meet final stabilization criteria.
  - Implement and install temporary BMPs to control erosion and sediment at staging areas (equipment storage yards, lay down areas).
  - Repair damaged temporary erosion and sediment control structures in accordance with the SWPPP.
  - Maintain stormwater BMPs on all disturbed lands during construction activities.
  - Upon completion of construction, install permanent erosion and sediment BMPs within the ROW and at related facilities.
  - The SWPPPs would be modified as necessary to account for changing construction conditions.
- Develop and implementing a Project Spill Prevention and RMP for the Project.
- On federal lands, the USAF or its subcontractors would consult with appropriate land management agency staff prior to siting and designing stream crossings (e.g., location, alignment, and approach for culvert, drive-through, and ford crossings). This may include a hydrologist, an engineer, and (for perennial and many intermittent streams) an aquatic biologist.
- If culverts are required for Project related road crossings of wetlands or waterbodies containing aquatic resources, culverts would include fish passage stipulations, such as: culverts would not be hydraulically controlled, which could create passage problems for aquatic organisms. Culvert slope would not exceed stream gradient and would be designed and implemented (typically by partial burial in the streambed) to maintain streambed

material in the culvert.

- If culverts are required for Project related road crossings of wetlands or waterbodies, all culverts on BLM management lands would be designed to meet BLM Gold Book standards (Surface Operating Standards and Guidelines for Oil and Gas Exploration Development).
- If culverts are required for Project related road crossings of wetlands or waterbodies, all culverts on NFS lands would be designed and installed to meet desired conditions for riparian and aquatic species as identified in the applicable Forest Plan.
- On non-federal lands, if culverts are required for Project-related road crossings of wetlands or waterbodies then their placement would comply with state BMPs.
- Determine the most appropriate preparation and installation methods for utilities at wetland and waterbody crossings on a case-by-case basis in coordination with the USACE and the states through the CWA Section 404 and 401 permitting processes.
- Use secondary containment systems of an appropriate size to prevent spills, for pumps operating or stored/staged and fuel and oil storage and refueling activities located, within 100 feet of a wetland or waterbody.
- Limit instream work for coldwater, coolwater, and warmwater fisheries to the following timeframes to minimize impact to spawning and migration activities, unless otherwise permitted or restricted by federal or state authorities. These time restrictions apply to both construction and operation/maintenance activities, except for the installation and removal of equipment bridges:
  - Coldwater fisheries - June 1 through September 30
  - Coolwater and warmwater fisheries - June 1 through November 30
- For Project activities conducted in and near Lodgepole Crow Creeks, and their tributaries in Wyoming:
  - Cross these waterbodies using directional drill methods where feasible.
  - Prevent any barriers to fish passage resulting from the crossing.
  - If road crossings are required, bridges would be utilized with bottomless arches, rather than building roads through the creek and installing culverts.
  - Avoid construction activities within associated ephemeral wetlands, including playas, dune ponds, and shallow oxbows. If construction activities are necessary, they would be conducted when the associated wetland/waterbody is dry when feasible.
  - Implement associated measures and practices (listed in other required mitigation measures listed for this Project) to minimize disturbances of aquatic systems from construction activities, including impacts from sedimentation and dewatering.
- Maintain adequate waterbody flow rates to protect aquatic life and preserve existing downstream uses during construction across streams and waterbodies.
- Cross waterbodies using standard upland construction techniques when they are dry or frozen and not flowing, provided that the Environmental Construction Inspectors verifies that water is unlikely to flow between initial disturbance and final stabilization of the feature. In the event of perceptible flow, construction techniques appropriate for waterbody crossings must be used (see the additional mitigation measure requirements for a description of the appropriate waterbody crossing techniques).
- Use sediment barriers during construction across streams and waterbodies to prevent the flow of spoil or silt-laden water into any waterbody.
- Prior to bridge installation, only cross waterbodies with equipment necessary for

installation of equipment bridges. Limit the number of such crossings and equipment allowed to the minimum number required to safely construct the bridge.

- Construct and maintain equipment bridges to allow unrestricted flow and to prevent soil from entering the waterbody during construction across streams and waterbodies. Design and maintain each equipment bridge to withstand and pass the highest flow expected to occur while the bridge is in place. Remove temporary equipment bridges as soon as practicable.
- Implement the following during dam-and-pump crossings of streams and waterbodies:
  - Use sufficient pumps, including on-site backup pumps, to maintain downstream flows.
  - Construct dams with materials that prevent sediment and other pollutants from entering the waterbody (e.g., sandbags or clean gravel with plastic liner).
  - Screen pump intakes to minimize entrainment of fish.
  - Prevent streambed scour at pump discharge; and,
  - Continuously monitor the dam and pumps to ensure proper operation throughout the waterbody crossing.
- Implement the following during flume crossings of streams and waterbodies:
  - Install flume pipe before any trenching.
  - Use sandbags, or sandbag and plastic sheeting diversion structure or equivalent to develop an effective seal and to divert stream flow through the flume pipe (note that some modifications to the stream bottom may be required to achieve an effective seal).
  - Properly align flume pipe(s) to prevent bank erosion and streambed scour.
  - Do not remove flume pipe during trenching, or backfilling activities, or initial streambed restoration efforts; and,
  - Remove all flume pipes and dams that are not also part of the equipment bridge as soon as final cleanup of the stream bed and bank is complete.
- Adhere to the following restrictions for open-cut crossing methods:
  - Complete instream construction activities (including trenching, utility installation, backfill, and restoration of the streambed contours) within 24 hours for minor waterbodies and 48 hours for intermediate waterbodies, unless site-specific conditions make completion within 48 hours infeasible. Streambanks and unconsolidated streambeds may require additional restoration after this period.
  - Limit use of equipment operating in the waterbody to that needed to construct the crossing. All other construction equipment must cross on an equipment bridge. Equipment bridges are not required at minor waterbodies that do not have a state-designated fishery classification or protected status (e.g., agricultural or intermittent drainage ditches).
- Prepare a plan for each waterbody or wetland that would be crossed using the horizontal directional drilling method, for review by applicable state and federal agencies. The plan would include:
  - Site-specific construction diagrams that show the location of mud pits, pipe assembly areas, and all areas to be disturbed or cleared for construction.
  - Justification that disturbed areas are limited to the minimum needed to construct the crossing.
  - Identification of any aboveground disturbance or clearing between the horizontal directional drilling entry and exit workspaces during construction.
  - A description of how an inadvertent release of drilling mud would be contained and

cleaned up; and
  - A contingency plan for crossing the waterbody or wetland in the event the horizontal directional drilling is unsuccessful and how the abandoned drill hole would be sealed, if necessary.
- During construction across streams and waterbodies, install sediment barriers immediately after initial disturbance of the waterbody or adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (e.g., after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete.
- Do not store hazardous materials, including chemicals, fuels, and lubricating oils, within 100 feet of a wetland, waterbody, or designated municipal watershed area, unless the location is designated for that use by an appropriate governmental authority. This restriction applies to storage of these materials and does not apply to normal operation or use of equipment in these areas.
- Follow federal and state-specific guidelines for minimizing effects on wildlife from open trenches.
- Notify the appropriate agencies if special status wildlife species are killed or injured as a result of project activities.
- Conduct a worker training program that informs workers and project personnel of the importance of adhering to all Project environmental management actions and mitigation measures for biological resources. This includes making all on-site personnel aware that most avian species are protected by federal and state laws; of USFWS-sanctioned grizzly bear hazing guidelines to reduce the likelihood of conflict, including potential injury or mortality (USFWS 2020b); that any project-related wildlife mortalities must be reported to the applicable agencies; and the importance of maintaining all project disturbances within designated areas and outside of avoidance buffers.
- Implement applicable measures from the Recommended Best Practices for Communication Tower Design, Siting, Construction, Maintenance, and Decommissioning prepared by the USFWS Migratory Bird Program (USFWS 2021), including:
  - Avoiding construction activities during the avian breeding season.
  - Conducting preconstruction avian surveys in areas where construction disturbances would occur.
  - Construct towers under 200 ft tall without supplemental lighting.
  - Limiting the amount of pilot warning and obstruction avoidance lighting used on a communication tower to the minimum required by the Federal Aviation Administration (FAA) for safe operation of the tower.
  - Using only flashing lights on the communication towers rather than non-flashing lights.
  - Using motion or heat-sensitive down-shielded ground security lighting where applicable/needed to decrease adverse effects on migratory birds.
  - Co-locate towers with existing development when feasible. When siting towers, avoid habitat features that congregate wildlife to the extent practical, such as water resources, habitat edges, and high-use movement areas.
- Construct self-supporting structures that do not require guy wires. If guy wires must be used, attach bird deterrent devices along the guy wires in accordance with USFWS MBTA guidance to minimize avian collisions with Project structures. Maintain these bird deterrent devices during operation of the Project.

- Install and maintain perch-deterrent devices to reduce raptor and raven predation pressures on special status species found at or near the following communication towers: Communication Tower #3 and #13 associated with F.E. Warren, which are located next to or within plains sharp-tailed grouse production areas. Production areas include 90 percent of sharp-tailed grouse nesting or brood-rearing habitat, mapped as a buffer zone of 1.25 miles around active leks within its Colorado range.
- Implement seasonal timing restrictions for activities that occur in big game winter range as determined by the applicable state wildlife agencies.
- Conduct all vegetation clearing outside of the avian breeding season (generally April 15–August 1, depending on local conditions and federal land management plan requirements) in order to minimize impacts on migratory birds to the maximum extent feasible. Where this is not feasible, conduct preconstruction surveys within the disturbance footprint within seven days prior to clearing. If an active nest (containing eggs or young) of a bird species protected under the Migratory Bird Treaty Act (MBTA) is found during either pre-construction surveys or construction activities, the nest would be identified to species, inconspicuously marked, and left in place until any young have fledged before the vegetation is removed. An appropriate site-specific buffer for detected species would be developed considering the type of disturbance, the habitat in which the disturbance occurs, and the species' general tolerance for human activity, which varies by species.
- Limit vehicular speeds during construction and operations to 25 miles per hour on all unsurfaced access roads.
- Construct new aboveground utilities, if required for the project, in accordance with Avian Power Line Interaction Committee guidelines.
- Prior to demolition activities of existing buildings, conduct visual surveys for bats roosting or hibernating on or within the building. If bats are observed, the USAF would alert the appropriate state and federal agency to determine the appropriate next steps (which are expected to be depended on which species of bat is detected and what that species listing status is at the time of detection).
- An inspector would accompany the Construction Contractor site engineers during the final engineering design or prior to ground-disturbing activities to verify and flag the location of any known occupied wildlife structures (e.g., nests, burrows, colonies) utilized by sensitive wildlife species or locations of sensitive plant species (e.g., listed plants) that could be impacted by the project based on the indicative engineering design. The final engineering design would be “micro sited” (e.g., routed) to avoid direct impact to these occupied structures to the maximum extent feasible within engineering standards and constraints.
- In the event any sensitive plants (e.g., listed plants) or federally protected wildlife species (e.g., raptor nests) require relocation, permission would be obtained from the applicable federal or state agency. If avoidance or relocation of a listed plant is not feasible, the topsoil surrounding the plants would be salvaged, stored separately from subsoil, and respread during the restoration process.
- Adhere to the conservation measures developed by the USFWS for ESA-listed species during Section 7 consultation.
- In the event that an ESA-listed species not covered by this Opinion is discovered during surveys, the USAF will cease construction, and notify the USFWS requesting to reinitiate this Section 7 consultation.

Species Specific Conservation Measures

Dakota skipper

The following conservation measures would be implemented for the Dakota skipper:

- Conduct preconstruction habitat surveys to determine the extent, condition, and location of suitable habitat for the Dakota skipper. The extent of occupied habitat would be determined based on field surveys or assumed based on habitat suitability determinations where survey data are not available or sufficient. Occupancy surveys, if conducted, would be completed by a Service permitted surveyor within one year prior to the start of construction following the current Dakota skipper survey protocol.
- Avoid suitable or occupied habitat for Dakota skipper along the utility corridors. Where habitat cannot be avoided through micro siting, perform directional drilling where feasible. Where directional drilling cannot be used to avoid suitable or occupied habitat, stake and flag the habitat for seasonal avoidance by a buffer of 0.6 mile during the active flight period of the species to minimize effects to the species during this sensitive period.
- No herbicides would be used in suitable or occupied Dakota skipper habitat between June 10 and July 25 (June 10–July 25).
- Conduct active restoration of suitable and occupied habitat for the Dakota skipper that were identified during preconstruction surveys and directly impacted during construction. Restoration actions in these areas would include seeding native prairie species, including larval host plants; use of appropriate seeding techniques (e.g., drill seeding or out-planting); and ongoing monitoring to ensure the success of the restoration effort. Monitoring of restored areas would be conducted to ensure they meet predetermined success criteria regarding the extent, cover, and diversity of native grasses, forbs, and weed species. Monitoring can cease once the area has achieved the predetermined success criteria.
- Reseed temporarily disturbed habitat with a native seed mix that includes regionally native milkweed and other butterfly-pollinated wildflowers where authorized to benefit invertebrate pollinators (based on landowner and land management agency requests/approvals).

Implementation of the Project's proposed avoidance and minimization measures for Dakota skipper and piping plover would not fully avoid all impacts to the species. Therefore, the USAF has agreed to work with the USFWS to determine suitable mechanisms to fund (similar to in-lieu-fee) existing Dakota skipper programs in order to compensate and/or off-set remaining Project impacts. This in lieu fee-like approach could include providing funds to the North Dakota Natural Resources Trust to be used for population enhancement, provide additional funding for ongoing research programs such as the U.S. Geological Survey (USGS) Northern Prairie Wildlife Research Center or the Nature Conservancy's Dakota skipper research efforts, or provide additional funding to existing programs aimed at restoring currently disturbed grassland habitats to native prairies. The exact scope and target for this funding would be determined through negotiation between and be mutually agreed to by USFWS and the USAF. It is anticipated the scope will focus on the temporal loss of habitat from the time of disturbance to mutually agreed upon success criteria of restoration. The funding would focus on a per acre basis of the temporal loss of habitat, until restored to an agreed upon metric.

Piping plover

The following conservation measures would be implemented for the piping plover:

- Conduct preconstruction surveys in wetlands with potential or documented piping plover nesting habitat that is outside of designated critical habitat that cannot be avoided during the breeding season (April 1–September 1)
- Buffer piping plover designated critical habitat and wetlands with potential or documented piping plover nesting by one-half mile between April 1 and September 1. Restrict all construction and maintenance activities within this buffer between April 1 and September 1 to minimize disturbance of nesting piping plovers.
- Develop appropriate conservation measures with USFWS if construction activities must occur within one-half mile of designated critical habitat during the piping plover breeding season (April 1–September 1).
- Design and construct Minot AFB Communication Tower #3, which is located near Lostwood National Wildlife Refuge (NWR), as a freestanding tower, without guy wires, to avoid avian collision risk.
- Directionally drill beneath piping plover critical habitat where it's designated primary constituent elements (PCEs) could be affected if the utility crossing was conducted using other methods (e.g., trenching).

Action Area

The multistate action area for the proposed action is defined as all locales that might be affected directly or indirectly by the proposed action and is not merely the immediate area involved in the action (50 CFR § 402.20). For discussion and analysis purposes, the overall action area has been broken down into the following components:

- The F.E. Warren action area comprised of F.E. Warren AFB in Nebraska, Colorado, and Wyoming, F.E. Warren AFB missile field, and Camp Guernsey, both in Wyoming;
- The Malmstrom action area comprised of Malmstrom AFB and Malmstrom AFB missile field in Montana;
- The Minot action area comprised of Minot AFB and Minot AFB missile field in North Dakota; and,
- Hill AFB and UTTR in Utah.

The action area encompasses the geographic extent of environmental changes (i.e., physical, chemical, and biotic effects) that would result directly and indirectly from the action (see **Appendix B, Figures 17-25)**. The action area, therefore, includes the spatial extent of all direct, indirect, interrelated, and interdependent effects from all the project elements. These effects include the spatial footprint for human- caused stressors such as disturbance as a result of human presence, human activity (which includes both human presence plus presence of vehicles, and other machines or materials), or from noise or light from construction activities. A spatial buffer has been included as part of the action area to account for noise propagation or lighting exposure where known.

The action area includes a 1,600-ft (0.3-mile) buffer for on-base construction, off-base construction within city limits, and portions of the existing and proposed utility corridors that would be collocated with state and interstate highways; and a 5,000-ft (1.0-mile) buffer in all other areas. The buffers established are based on the anticipated extent of potential noise as these effects are expected to have the largest spatial extent from the project of any project - related effect. Moreover, a 3-mile downstream buffer in Preble's habitat (to account for the effects from erosion, sedimentation, pollution, hydrologic changes, and fragmentation) is included, based on direction from USFWS. **Table 9** provides an estimate of construction noise levels based on distances from their source. Construction noise would exceed background levels within 1,600 ft (0.3 mile) for on-base construction, off-base construction within city limits, and portions of the new utility corridor that would be collocated with state and interstate highways. Additionally, construction noise would exceed background levels within 5,000 ft (1 mile) in all other areas.

Table 9. Estimated Sound Levels from Construction Activity

Distance (ft)	Level (dBA)
50	80
100	77
200	72
400	67
800	61
1,600	55
3,200	49
6,400	43
12,800	37
25,600	31

Sources: FHWA 2006; Harris 1998.
Notes: dB levels at distances shown assume soft ground attenuation. dBA = A weighted decibels.

Status of the Species

Dakota skipper

Biology and Habitat:
The Dakota skipper is a small, orangish-brown butterfly with a one-inch wingspan. It was listed as threatened by USFWS effective November 24, 2014 (79 FR 63672, October 24, 2014). This listing includes exemptions from ESA section 9 take prohibitions under a section 4(d) rule. The 4(d) rule provides exemptions from take related to livestock operations and recreational trail maintenance on non-federal lands. A 5-year status review for the Dakota skipper was initiated in April 2018 (83 FR 18075, April 25, 2018). In January 2020, USFWS published a draft recovery plan for the Dakota skipper (85 FR 4336, January 24, 2020), with a final plan published in 2021. The Service designated critical habitat for the species in 2015 (80 FR 59248, October 1, 2015), however the Project's action area does not overlap with any portion of Dakota skipper critical habitat (Jerry

Reinisch, USFWS, personal communication, August 5, 2020), therefore it is not considered in this Opinion.

The Dakota skipper inhabits high-quality mixed and tallgrass prairies that have retained a large part of their historic plant diversity. The species primarily inhabits two types of prairie habitats, as described in the Dakota skipper North Dakota survey protocol (ND protocol) (USFWS 2018b):

- Type A Habitat, which consists of low-lying, wet-mesic bluestem (*Andropogon*) prairies with little topographic relief, in which three wildflower species are usually blooming when Dakota skippers are adults—harebell (*Campanula rotundifolia*), smooth camas (*Zygadenus elegans*), and wood lily (*Lilium philadelphicum*); and
- Type B Habitat, which typically supports a high diversity and abundance of native forbs in upland prairies that are relatively dry and often found on ridges and hillsides.

Bluestem grasses and needlegrasses (*Nassella*) dominate these two types of prairies, and purple coneflower (*Echinacea angustifolia*) is typical of high-quality sites that support Dakota skipper; however, this species also uses other flower species as nectar sources. Both prairie habitat types are unlikely to be reestablished on a site that has been plowed or disturbed (Kindscher and Tieszen 1998). As a result, active restoration of disturbed native prairies is typically required to restore the area to pre-disturbance conditions.

In their larvae stage, Dakota skipper feed on native bunchgrasses like little bluestem (*Schizachyrium scoparium*), prairie dropseed (*Scorobolus heterolepis*), and sideoats grama (*Bouteloua curtipendula*) (USFWS 2018a). As adults, the Dakota skipper feed on nectar from a variety of flowers, including the purple coneflower (USFWS 2018a). The Dakota skipper has four basic life stages: egg, larva, pupa, and adult. During the brief adult period in June and July, the female lays eggs on the underside of leaves. Eggs take about 10 days to hatch into larvae (caterpillar). After hatching, larvae build shelters at or below the ground surface and emerge at night to feed on grass leaves. The larvae continue to feed in this manner until fall, when they become dormant. They also overwinter in shelters at or just below ground level, usually in the base of native bunchgrasses. The following spring, larvae emerge to continue developing. Pupation, which takes about 10 days, usually happens in June. Adult males emerge from pupae about 5 days before females, and the adults live for 3 weeks at most. This brief period is the only time they can reproduce. If a female lives for the full 3 weeks and if adequate flowers for nectar are available, she could lay up to 250 eggs (USFWS 2014).

Status and Distribution:

Historically, the Dakota skipper was recorded from northeast Illinois to southern Saskatchewan. It has been extirpated from Illinois and Iowa and are present only in scattered, mostly isolated sites in the Dakotas, Minnesota, and southern Canada (USFWS 2018a, p 37). The largest populations may be in western Minnesota, northcentral and western North Dakota, northeastern South Dakota, and southern Manitoba (Heidi Riddle, USFWS, personal communication, July 8, 2020). In North Dakota, the species was documented as present in McHenry, Mountrail, and Ward counties, is believed to be possibly extirpated in Burke and McLean counties (USFWS 2018a). Based on recent surveys, the Service now considers the Dakota skipper to be present in parts of Bottineau and Renville counties (Jerry Reinisch, USFWS, personal communication, August 5, 2020).

In the early 2000s, an increase in the extirpation of Dakota skipper populations became evident, with drastic declines observed beginning around 2010. At the time of listing, we identified 83 sites to be present and 88 sites to have unknown status, both of which we considered to be extant (totaling 171). We have updated the definition of a "site" since the time of listing based on the dispersal distance between known observation points. Instead of "sites" we now analyze populations at a metapopulation and subpopulation scale (USFWS 2018a, pp. 5- 7). As of 2018, we estimate there are 82 metapopulations consisting of 163 subpopulations that persist across 3 states and 2 Canadian provinces. Because the classification of site boundaries has changed in some cases and new populations have been discovered, it is difficult to directly assess how populations have changed since listing. Using the methodology in the Species Status Assessment (SSA), 14 populations have become extirpated since the time of listing, including 7 in Minnesota, 6 in South Dakota, and 1 in North Dakota (USFWS 2018b).

With the continued loss of native prairie habitat throughout North Dakota the number of known populations in some areas has declined. Additional surveys have been concentrated in the region of oil and gas production and new populations have been discovered since the species was listed. A total of 47 new populations have been observed primarily in McKenzie and Mountrail and Ward Counties (**Table 10**).

Table 10: Number and location of new populations discovered since listing.

Year	Number of Sites	Location of populations
2014	3	McKenzie and Mountrail Counties, ND
2015	18	Dunn, Mountrail, and Ward Counties, ND
2016	10	McHenry, McKenzie, and Mountrail Counties, ND
2017	4	McKenzie, Renville, and Stutsman Counties, ND
2018	3	McKenzie and Ward Counties, ND
2019	4	McKenzie, Mountrail and Ward
2020	5	McKenzie, Mountrail, Oliver and Ward

The capacity for Dakota skipper populations to grow is limited by the quantity and quality of the habitat and by connectivity among habitat patches. The minimum extent of habitat that is sufficient to support a healthy local population is unknown, but discrete populations have been recorded in prairie remnant patches as small as one acre. Populations in patches this small likely rely heavily on the existence of populations in nearby patches to ensure their long-term persistence.

Threats:
The SSA includes a detailed discussion of the threats that may affect the resiliency of the Dakota skipper (USFWS 2018b, pp. 42-54). Factors responsible for habitat loss, fragmentation, and degradation considered in the SSA include:

- conversion of native prairie for agriculture or urbanization; ecological succession of native prairie to habitats dominated by brush or trees;
- invasive species;
- direct and indirect effects of pesticides, including herbicides;
- flooding;
- climate change; and,

- incompatible land management regimes that degrade the species' habitat.

The scale of habitat impacts from gas and oil development may have been understated in the listing decision, particularly in the western portion of the range where new populations have been discovered (USFWS 2018a, pp. 49-50). Since listing, proposed construction for pipelines and oil well pads resulted in the discovery of 9 new Dakota skipper metapopulations made up of 27 subpopulations and in some cases, suitable habitat had been impacted (USFWS 2014). Other new potential threats have been identified through research, such as a slower growth rate for Dakota skippers forced to feed on sub-optimum larval food plants, such as Kentucky bluegrass (*Poa pratensis*) and smooth bromegrass (*Bromus inermis*). If developing larvae are unable to find suitable high quality food sources, they will likely have reduced fitness and survivorship (Delphey et. al 2017, pp. 4-8).

Management regimes, such as grazing, haying, fire or even the lack of management may reduce resiliency if it is conducted too frequently or too broadly within the available habitat and the species is unable to recover from yearly losses. If local populations are reduced or habitat continues to degrade to where it is no longer suitable, the ability of adjacent populations to disperse, interact, and replenish genetic stock become less likely and this may result in a total loss of the populations.

Prairie conversion appears to be the greatest within portions of the Canadian provinces of Manitoba, Saskatchewan, and Alberta (16.44 percent loss in the region during 2011-2015). Similarly, the Prairie Pothole Joint Venture region, which includes the remaining U.S. populations of Dakota skipper, have had a 10 percent loss of grasslands during that same 5-year period (USFWS 2018b, p. 50). While the amount of suitable Dakota skipper habitat loss is unknown, the decrease of grasslands only increases fragmentation and the potential for pesticide drift and exacerbates the spread of invasive species into natural habitats.

We are just starting to understand the complexity of the influences of climate change on the Dakota skipper. One of the likely effects of climate change is the lengthening of the growing season, which allows invasive species, such as Kentucky bluegrass and smooth bromegrass, to get a stronger foothold on remaining prairie remnants (USFWS 2018a, p. 51). As mentioned above, these sub-optimum food plants have been shown to affect Dakota skipper development. We need to explore more climate change factors during the recovery stage to better understand the potential effects to the species, especially with regards to invasive species and prairie quality. Under the climate model analyzed in the SSA, increased annual precipitation across the range of Dakota skipper is projected and could result in increased woody encroachment leading to the continued degradation of native prairie ecosystems, if not managed (USFWS 2018a, pp. 52-53).

Summary

The Dakota skipper is still relatively widespread and persists in a variety of ecological settings, which confer resiliency, redundancy, and representation benefits. The frequency and intensity of droughts, for example, likely vary across the many different ecological settings and landscapes that the species still inhabits. The species' current widespread distribution thus provides some buffer against range wide-scale catastrophes. Some populations have been extirpated since the species was listed and the health of other populations continues to decline. New populations have also

been discovered, however; the overall species status had not changed substantively since it was listed.

Piping plover

Biology and Habitat

The piping plover is a small migratory shorebird that nests and feeds along sand and gravel beaches. The piping plover was listed as threatened on January 10, 1986, under provisions of the ESA of 1973, as amended (50 FR 50726:50727). Piping plovers breed in three geographic regions of North America: beaches along the Atlantic Coast from South Carolina to Newfoundland, shorelines of the Great Lakes, and adjacent to alkaline (naturally salty) wetlands and major rivers and reservoirs of the Northern Great Plains (NGP). Critical habitat for the piping plover was designated in 2002. A recovery plan was drafted in 1988 and the 5-year review was completed in 2020 confirming the current listing status.

The majority of piping plovers in the North Dakota portion of the NGP can be found on prairie alkaline lakes or along the Missouri River system. Nesting locations and suitable habitat are based on water levels along these corridors where sand and gravel deposits can be exposed. Piping plovers can be found in these areas, if the conditions are adequate, from mid-April to August. Plovers nesting on the shorelines of alkaline wetlands and lakes occurs primarily in North Dakota, Montana, and Canada. Nesting on the shorelines of sand and gravel mines occurs primarily in Nebraska. Within the Canadian breeding range, plovers nesting habitat includes both on alkaline and freshwater lakes and reservoirs in Alberta, Saskatchewan, Manitoba, and Ontario (Environment Canada 2006).

Piping plovers nesting on the Missouri, Platte, Niobrara, Loup, and other rivers, use reservoir shorelines and large dry, barren sandbars in wide, open channel beds. Vegetative cover on nesting islands is usually less than 25 percent (Ziewitz et al. 1992) and a blend of sand and gravel is more often selected as nesting substrate compared to sites dominated by either sand or gravel Whyte (1985). Twenty-eight Platte River sandbars, occupied by nesting piping plovers, averaged 938 ft (286 m) in length and 180 ft (55 m) in width (Faanes 1983). Vegetative cover on those sandbars averaged 25.4 percent. Armbruster (1986) estimated the optimum range for vegetative cover on nesting habitat from 0–10 percent, and Schwalbach (1988) found that 89 percent of the plovers nested in areas of less than 5 percent vegetative cover. On the Missouri River, the majority of the plovers (63 percent) nested in areas where vegetation was less than 4 in (10 cm), with the average vegetation height ranged from 2 to 11 in (6 to 29 cm) (Schwalbach 1988, p. 40-41).

Plovers may select nest sites farther away from the water's edge, when available. Average elevation of plover nests above river level ranges from 7.4 in (19 cm) below Gavin's Point Dam to 12 in (30 cm) below Garrison Dam (Schwalbach 1988, Dirks 1990). Beach width (the distance from the water to edge of the upland vegetation) and elevation above the water may also influence use by breeding plovers (Lambert and Ratcliff 1981; Whyte 1985; Weseloh and Weseloh 1983; Prindiville-Gaines and Ryan 1988; Faanes 1983; North 1986).

Wider and topographically diverse (raised) beaches likely provide multiple benefits for nesting – greater horizontal visibility, early detection of terrestrial predators, isolation from human

disturbance, low likelihood of inundation, and proximity to feeding habitat. Greater line-of-sight distances for enhanced predator detection by adults (Prindiville-Gaines and Ryan 1988) may be especially important during the rearing stage for flightless offspring. Wider bands of nesting habitat also provide an added buffer against rising water levels and wave actions (Haig and Oring 1986). Distance to water is typically less in nesting habitat associated with rivers (mean = 16 m, n = 39 m) (Faanes 1983, p. 149) than reservoir or lake habitat (mean = 46.2 m) (North 1986). Adult plovers and broods typically forage within unvegetated beach habitat, searching for invertebrates at or near the wetted margin of beaches and sandbars.

Water-level rises on reservoirs are common during summer when plovers are nesting. Nest inundation is the greatest threat to plover nest success on Lake Sakakawea and probably other reservoirs (Anteau *et al.*2012). Those authors found that observed and model-predicted annual nest success estimates for plovers on Lake Sakakawea from 1985 – 2012 were markedly lower than those observed at other breeding areas. They concluded that heavy use of Lake Sakakawea by plovers represents a potential threat to population persistence because of potential negative impacts to recruitment (Anteau *et al.* 2012).

It is thought that when habitat quality is high, higher nest density and overall success can be achieved than compared to when habitat conditions are poor (Kruse et al. 2002). However, at times high nest density can trigger a high degree of intra-specific competition that can decrease overall fecundity which could lead to demographic consequences (Anteau et al. 2012, p.201). Fidelity to natal rearing habitat for first-year breeding adults is comparatively high, with reported natal-site fidelity as high as 50 percent (Gratto-Trevor and Abbott 2011, p. 386).

Piping Plover Critical Habitat

Designated piping plover critical habitat in North Dakota can be found on the Missouri River, Lake Darling, Lake Oahe, and Lake Sakakawea, as well as on many alkali lakes and wetlands. The one overriding critical habitat PCE required to sustain a breeding population of piping plovers is the dynamic ecological processes that create and maintain piping plover habitat. These processes develop a mosaic of habitats on the landscape that provide the essential combination of prey, forage, nesting, brooding, and chick rearing areas, creating different physical PCEs on the landscape that exist in different habitat types. Critical habitat for piping plover includes four habitat types: prairie alkali lakes and wetlands, rivers, reservoirs, and inland lakes. For prairie alkali lakes and wetlands, the physical PCEs of critical habitat include shallow, seasonally-to-permanently flooded, mixosaline-to-hypersaline wetlands with sandy-to-gravelly, sparsely vegetated beaches, salt-encrusted mud flats, and/or gravelly salt flats; springs and fens along edges of alkali lakes and wetlands; and adjacent uplands 200 ft above the high-water mark. The physical PCEs for rivers include sparsely vegetated channel sandbars, sand and gravel beaches on islands, temporary pools on sandbars and islands, and the interface with the river. The physical PCEs for reservoirs include sparsely vegetated shoreline beaches, peninsulas, islands composed of sand, gravel, or shale and their interface with the waterbodies. The physical PCEs for inland lakes include sparsely vegetated and windswept sandy-to-gravelly islands, beaches, and peninsulas and their interface with the waterbody (67 FR 57643, September 11, 2002). USFWS recommends a one-half-mile protective buffer around all critical habitat and wetlands with potential or documented plover nesting between April 1 and September 1 to minimize any disturbance of nesting piping plovers from construction and maintenance activities (Heidi Riddle, USFWS,

personal communication, January 27, 2021).

The USAF has committed to avoiding adverse effects to piping plover critical habitat PCEs by directionally drilling for utility lines in the vicinity of plover habitat. Therefore, no further analysis of impacts to critical habitat are included in this Opinion. Evaluation of project effects to plover critical habitat are included in the attached informal section 7 consultation.

Status and Distribution

With the exception of a few individuals that breed in Colorado, Iowa, Kansas and Minnesota (Elliott-Smith and Haig 2009, p. 3), the key NGP piping plover breeding habitat occurs in Montana, North and South Dakota, and Nebraska (**Figure 26**). The species is comprised of four local populations within the NGP. The observed spatial and behavioral aspects of the species within each local population conform reasonably well to the general criteria of a metapopulation described by Hanski (1999, p. 3): discrete geographic distributions of local populations; the

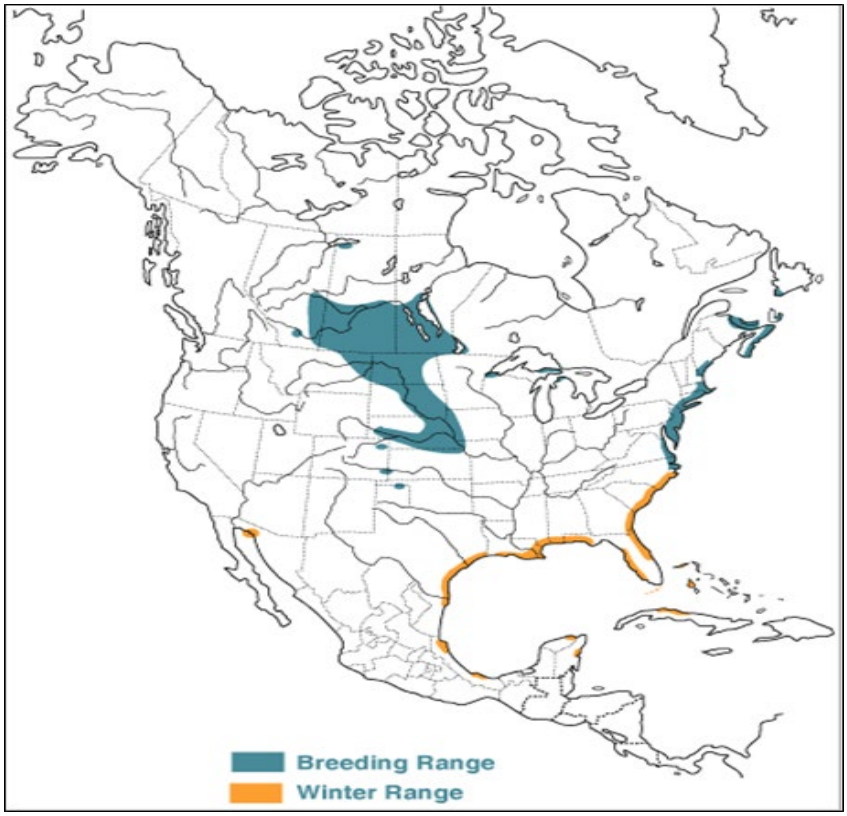


Figure 26. Approximate location of the piping plover breeding and winter ranges in the United States, Mexico, Cuba, and the Bahama Islands. *Credit: Birds of North America Online http://bna.birds.cornell.edu/bna maintained by the Cornell Lab of Ornithology*

presence of ecological processes occurring at two scales (local and metapopulation scales); and the breeding habitat within each discrete area is sufficiently large and stable to enable the local populations to persist for multiple generations. We collectively refer to the local populations as a metapopulation and for the purposes of recovery planning, we established one management region for each metapopulation as follows:

- Northern Rivers Management Region (NRMR: Missouri River system on Fort Peck Lake, Montana to Pierre, South Dakota);
- Alkali Lakes Management Region (ALMR in North Dakota and Montana;
- Southern Rivers Management Region (SRMR: Missouri River system from Fort Randall Dam, South Dakota to Ponca, Nebraska, the Niobrara River, the Loup River system and the Platte River system in Nebraska); and
- Prairie Canada Management Region (PCMR; all river, reservoir and wetland habitats in Prairie Canada)

The management regions as described above represent the scale at which local breeding populations of the species have been recorded and studied (Catlin 2009; McGowan et al. 2014; Catlin et al. 2015). While breeding piping plovers in the NGP clearly have spatial separation from each other (**Figure 27**), connectivity and exchange of breeding adults transitioning between breeding areas has been well documented (Licht 2001, p. 217).

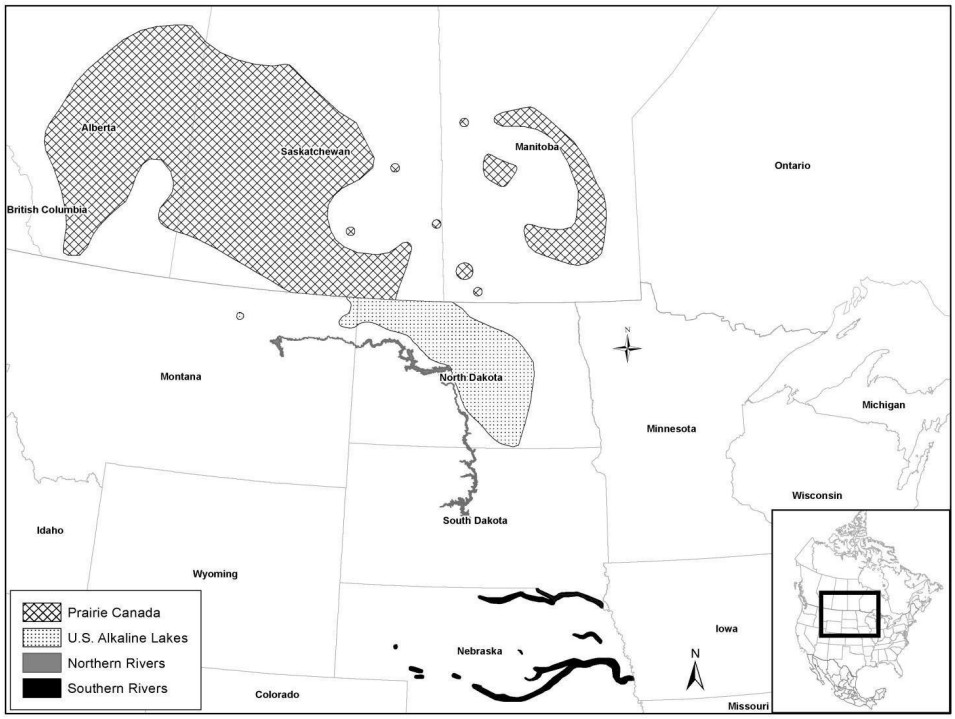


Figure 27: Map depicting the four primary geographical management regions encompassing the local breeding populations of the Northern Great Plains piping plover metapopulation.

Preliminary analyses of data from a study initiated in 2012 (Anteau, in litt. 2018) suggest the rate of dispersal among breeding areas has high inter-annual variability for known breeding adults, but over time has averaged 14 percent. Marked first year breeding plovers dispersed from their natal breeding habitat at an average rate of 50 percent among metapopulations in the NGP (Anteau, in litt. 2018). In some instances, piping plovers have dispersed considerable distances from their natal habitat to breed. There have been three separate observations of marked plovers interchanging between the Great Lakes, Atlantic Coast and NGP populations since 2009. The apparent low rate

of detected interchange at the population scale is not surprising given the spatial scale of separation between the populations. The actual interchange rate between breeding populations is presumably higher.

At the time of listing (1985), the NGP breeding metapopulation was estimated to be approximately 1,439 pairs (50 FR 50726:50727). Most of the NGP metapopulation (868 pairs; 60 percent) occurred in Canada at the time of listing. The breeding population within the U. S. (571 pairs) was distributed in six states (Iowa, Minnesota, Montana, Nebraska, North Dakota, and South Dakota), but most occurred in Nebraska and North Dakota (487 pairs; 85 percent) in 1985 (50 FR 50726:50727).

The NGP population is the largest, with a 1991 estimate of 2,953 individuals (pairs are not tracked in the NGP as they are in the other two populations) and an estimated 4,662 individuals in 2006 (2,959 in the U.S., excluding Canada) (Ferland and Haig 2002, Elliott-Smith and Haig 2009).

In 1991, approximately 38 percent of the NGP population was observed on reservoirs, river shorelines, and sandbars. In 1996, 15.1 percent was observed at those areas; this was a high-water year and much of the habitat along rivers was inundated, likely forcing birds to nest elsewhere. This suggests that habitat use by piping plovers is dynamic and that the habitat necessary to support the northern Great Plains population is diverse.

Piping plovers primarily breed in four habitat types in the NGP—alkali lakes and wetlands, large inland lakes, reservoirs, and rivers. As is typical of most members of the genus *Charadrius*, piping plovers breed in open, sparsely vegetated sand and gravel habitats associated with the shorelines and islands of lakes, reservoirs, and rivers in Nebraska, South Dakota, North Dakota and Montana (USFWS 2009, pp. 95-96). Determining the number of breeding plovers or even identifying a clear trend in the breeding population has been challenging. The breeding conditions and overall fecundity of the NGP piping plover breeding metapopulation has substantial inter-annual variation, making trend tracking difficult. In addition, the breeding areas occur in a patchy array of habitats, widely dispersed in rural landscapes making access difficult, especially in the alkaline lake regions of the U.S. and Canadian provinces. These conditions at a large geographic scale contribute to surveying difficulties and increased uncertainty when attempting to describe trends. Given these inherent complexities, monitoring and surveying efforts at the scale of the metapopulation have generally proven to be unreliable over time. Nonetheless, below we describe the scope and limitations of the metapopulation survey efforts to enumerate breeding plovers over time.

The International Piping Plover Census (Census) is the only monitoring effort in the NGP at the scale of the metapopulation. The Census began in 1991 and was designed to address the variability in piping plover breeding adults by implementing a comprehensive, range-wide survey every five years. During a two-week window, voluntary surveyors attempt to visit every known breeding area and search for new breeding areas to enumerate every plover. The relatively short survey window is designed to minimize error associated with double counting.

This ambitious survey has yielded excellent information towards discovering new locations of breeding adults within each local population (Brennan, in litt. 2018), likely a result of the strong support and participation of many (Elliot-Smith and Haig 2009, p. 4). However, researchers and

managers have learned to be cautious in drawing inferences from Census estimates of abundance over time due to data limitations.

Based on the survey results in 2011, the overall abundance of the NGP metapopulation decreased by about 50 percent. However, the apparent reduction in abundance was likely due to a decrease in the detection rates caused by widespread flooding in the Missouri River basin in 2011. The precipitation and spring runoff were near historic highs in 2011, causing breeding plovers to widely disperse. The high precipitation also caused searcher efficiency to decline (limited access and flooded nesting habitat). Thus, 2011 results more likely reflect a decline in observer detection rates, rather than a decline in abundance. In this instance, the Census methodology may not be sufficiently robust in design to accommodate such a shift in detection rates. Given that the Census methodology assumes the same detection rates between years, we conclude abundance estimates from Census data for the NGP metapopulation are not credible in all years for tracking abundance over time. However, some inference is useful for context.

Removing from consideration the 2011 estimates of adult plovers in the NGP, the census data for the period 1991-2006 suggest an overall and relatively strong increasing trend. The estimated metapopulation abundance of over 4,500 adult plovers (ca. 2,250 pairs) in 2006 represents an increase of approximately 40 percent when compared to the abundance estimates of 3,000 to 3,500 adults for the period 1991 to 2001 (and an increase of approximately 60 percent from the 1985 estimate of 1,439 pairs at the time of listing) (50 FR 50726:50727).

Although the Census is the only international standardized approach aimed at estimating abundance at the metapopulation scale, there are many independent but more localized monitoring efforts undertaken each year by governmental agencies and research entities in the United States. From the annual reports associated with these efforts, we compiled all the survey results from 1993-2013 and paired these data with Census data only from prairie Canada (1996, 2001, 2006, and 2011) from the same period to provide an overall estimate of abundance for the entire NGP breeding range.

Abundance estimates exclusively from the Census data and those from combined data sets compare favorably. These data suggest the NGP metapopulation abundance has varied considerably, between a low of approximately 2,000 individuals (2011) to a high of 4,500 individuals (2004–2008). The estimated arithmetic mean of the abundance during the period has been approximately 3,086 individuals.

Threats

The primary threat to piping plovers is habitat disturbance and destruction. Human disturbance, predation, disease, climate change, and invasive plants can also be viewed as possible threats to this species. Minimization efforts should be utilized to reduce these threats to the species. The Service recommends a 0.5-mile protective buffer around all potential or documented piping plover habitat from April 1 to September1 to minimize disturbance from construction and maintenance.

Summary

The piping plover breeding population in the NGP appears to be reasonably stable. Plover metapopulations are relatively widespread and persist in a variety of ecological settings. The

frequency and intensity of droughts or floods can result in significant effects to local populations, but rarely affect multiple populations simultaneously. The species' current widespread distribution thus provides some buffer against range wide-scale catastrophes.

Analysis of the Species/Critical Habitat Likely to be Affected

After evaluating the status of both the Dakota skipper and piping plover, the Service has determined the only portion of the Project action area where effects to the Dakota skipper may occur is in North Dakota associated with Minot AFB and the Minot AFB missile field (**Appendix B, Figure 23**), as well as any new or existing utility corridors where construction may occur. The piping plover may be affected in the Minot portion of the action area, and has been rarely observed near the Malmstrom AFB area. There are no known occurrences of the Dakota skipper or piping plover in the vicinity of F.E. Warren AFB, F.E. Warren AFB missile field, and Camp Guernsey, therefore, those areas are no longer considered part of the action area for this Opinion. However, they remain part of the action area for the species considered in the accompanying informal section 7 consultation.

Environmental Baseline

Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed federal projects in the action area that have undergone section 7 consultation, and the impacts of State and private actions which are contemporaneous with the consultation in progress. As stated above, the Environmental Baseline is only described where effects of the action may impact the Dakota skipper and piping plover.

A majority of the Project action area in North Dakota is on USAF property including Minot AFB and the Minot missile field (**Appendix B, Figure 23**). Military actions, subject to section 7 consultation, have occurred within these areas, but have not affected the Dakota skipper or piping plover. The remaining Project related impacts would occur in the proposed utility corridors. Many of the utility corridor areas have been previously impacted by utility installation, but those were non-federal actions and were not required to consult under section 7.

Dakota skipper

The requisite habitat for Dakota skipper is undisturbed native prairie. This type of landscape can be represented by a tall grass or short grass mixed prairie culture of plant species. The Project action area is primarily located in the tall grass type of native prairie in north-central North Dakota (**Appendix B, Figure 28**). Project locations with potential Dakota skipper habitat must be evaluated before the North Dakota Department of Transportation will issue a Certificate of Approval for the site to be disturbed (NDDOT 2020). Most of the action area is located in Mountrail and Ward Counties, North Dakota. It is dominated by private land, mostly comprised of steep slopes associated with the Souris River watershed, which transitions to rolling plains. These private lands are typically used for cattle grazing and the rolling hills for small grain and row crop agriculture.

The new utility corridors linking the missile fields to the Minot MW as part of the Project would cross into seven counties in western North Dakota. The Survey Area for the Dakota skipper, as identified in the Study Plan, is located on approximately 82 percent (650 acres) of private land, while the remaining 18 percent (145 acres) is on a mix of Bureau of Indian Affairs (70 acres), USFWS (40 acres), state (31 acres), and U.S. Army Corps of Engineers (4 acres) land.

The Survey Area for Dakota skipper was within all eight North Dakota counties overlapped by the Minot AFB missile field: Bottineau, Burke, McHenry, McLean, Mountrail, Renville, Sheridan, and Ward. The Survey Area comprised approximately 500 miles of proposed utility corridor and five proposed communication tower sites. The portion of the Survey Area for the proposed utility corridor followed existing roads and extended 50 feet from the edge of each side of the road. The portion of the Survey Area at the proposed communication tower sites included a 5-acre area around each proposed tower. The field surveys evaluated the proposed utility corridor covering both sides of the road and the 5-acre proposed communication tower sites except where right-of-entry (ROE) was not granted. In some locations, only one side of the road was field surveyed because ROE had not been granted for the opposite side.

One hundred forty-three survey points were taken during the field survey in 2020. One hundred four of these points comprising 475.1 acres were taken in areas that had no potential habitat present. The justification for areas not being deemed Dakota skipper habitat included areas of cropland (soybeans, corn, wheat, canola, or other), obligate wetlands, or human disturbance areas.

Human disturbance generally was interpreted to be residential housing, commercial properties, or highly disturbed lands with no native vegetation and no agricultural production. Thirty-five of these points comprising 262 acres were identified as maybe having potential habitat for Dakota skipper. A “maybe” determination was made when an area had some native prairie grasses and a few scattered flowering plants, but the dominant vegetation was non-native (smooth brome or other) as identified in the ND protocol. Four points comprising 57.4 acres were taken in areas where there was a dominance of native prairie grass species along with a variety of flowering plants as identified in the ND protocol. **Table 11** provides a summary of the location data for the potential Dakota skipper habitat in the Survey Area.

Table 11. Potential Dakota Skipper Habitat in the Survey Area

Dakota skipper habitat locations		
Determination	**Points recorded**	**Total (acres)**
Yes	4	57.4
Maybe	35	262
No	104	475.1
Total	**143**	**794.5**

Additional surveys were conducted in 2021 to develop a suitable habitat field inventory, mapping, and pedestrian field surveys for the Dakota skipper. The surveys were specifically focused on the missile field of the USAF’s 91st Missile Wing at Minot AFB. During the 2021 surveys, the team conducted a field survey of the areas identified during the desktop analysis, where ROE had been granted, to determine if areas of potential habitat were suitable habitat for Dakota skipper. The

surveys were conducted from June 29 through July 6, 2021. The survey period was scheduled during the active period of the Dakota skipper, which coincides with the flowering period for the indicator plant species that aid in identifying suitable habitat. The surveyed areas had to fit the definition of Dakota skipper habitat provided in the ND protocol (USFWS 2018a).

To determine species composition in the potential Dakota skipper habitat areas, the survey team conducted a pedestrian survey of the vegetation. General observations were made of native species composition as well as of flowering plant species. Based on these observations, the team took a global positioning system polygon. Data collected at each polygon included a determination of suitable habitat (i.e., yes or no) and justification for that determination. These habitats are based on the ND protocol (USFWS 2018a).

During the field survey, suitable habitat was mapped in both the Survey Area and the area immediately adjacent to the Survey Area. The area adjacent to the Survey Area was evaluated because the Survey Area width is very narrow (50 feet) and the species can forage in plants that may occur in the Survey Area but that would not meet the criteria for habitat. Including suitable habitat in the adjacent areas provides context for the suitability of habitat for the species. For areas identified during the desktop analysis but for which ROE had not been granted, the areas remained "unconfirmed" for suitable habitat. In areas where Dakota skipper desktop polygons were absent and the field observations agreed with that assessment, no point or associated polygon was collected.

Potential Dakota skipper habitat was identified within 100 miles of proposed utility corridor and three proposed communication tower sites during the desktop review. Seventy-two miles of proposed utility corridor and one proposed communication tower site with potential habitat were not field evaluated during the 2021 field season because either ROE was not granted at the time of the survey or road construction impeded the ability to survey the areas. Because these areas have not been field evaluated, they are considered potential habitat and identified as "unconfirmed" for suitable habitat.

The remaining 28 miles of proposed utility corridor and two communication tower sites identified during the desktop analysis as potential Dakota skipper habitat were evaluated during the 2021 field survey. Of the surveyed areas, 11 miles of proposed utility corridor and one proposed communication tower site were field confirmed and evaluated as having no suitable habitat. The justification for areas not being deemed Dakota skipper suitable habitat included areas that either consisted of non-native grass cropland (soybeans, corn, wheat, canola, or other) or were human disturbance areas. The remaining 17 miles of proposed utility corridor and two proposed communication tower sites were deemed to have suitable habitat.

Of these 17 miles of proposed utility corridor consisting of suitable habitat, 13 miles had suitable habitat adjacent to the Survey Area, but not within the Survey Area, and approximately 4 miles of proposed utility corridor and one proposed communication tower site had suitable habitat in the Survey Area and also immediately adjacent to the Survey Area. Suitable habitat identified in these areas had a dominance of native prairie grass species along with a variety of flowering plants as identified in the ND protocol (USFWS 2018a). **Table 12** provides a summary of the location data for the potential Dakota skipper habitat in the Survey Area.

Table 12. Suitable Dakota Skipper Habitat

Determination	Proposed utility corridor (miles)1	# of Proposed communication tower sites
Yes–Adjacent to Survey Area	13	0
Yes–Both adjacent to and in the Survey Area	4	1
Unconfirmed	72	2
No	11	2
Total	**100**	**5**

Note:[1] In some areas, the survey may have included only one side of the road due to ROE access limitations.

Piping plover

The piping plover is a rare migrant at the F.E. Warren and Malmstrom portions of the action area, but not expected to be present at either of the AFBs, Camp Guernsey, Hill AFB or UTTR because of the lack of suitable habitat and documented occurrences in those locations (USGS 2019; eBird 2021; CNHP 2021, MTNHP 2021; NENHP 2020; WYNDD 2020, 2021). The piping plover regularly occurs during migration and breeding season at Minot AFB.

No known nesting of piping plovers has occurred on the Minot AFB, but utility corridors for the missile field cross several areas of critical and suitable habitat which would require either a change in construction scheduling or surveys to establish presence or absence. Water conditions and levels, based on weather patterns may influence suitability of these habitat areas. Piping plover breeding surveys have not been conducted within the North Dakota portion of the Project action area.

Piping plover have been observed in all counties overlapping the action area throughout the Minot AFB missile field, especially on Lake Sakakawea, along the Missouri River, and within other areas designated as critical habitat (eBird 2020; NDNHI 2020). Piping plovers breed and migrate throughout the central and western parts of North Dakota along the Missouri River system and alkali lakes and any wetlands with sandy to gravelly sparsely vegetated beaches (USFWS 1988). Many of these breeding sites are within the designated critical habitat. Critical habitat (about 43 acres) overlaps the action area near one LF site (G-05; 1.9 acres) and multiple sections of the proposed and existing utility corridor at various locations in Burke, McHenry, McLean, Mountrail, and Ward counties.

The proposed utility corridor overlaps include the following: Upper Thompson Lake (alkali lake) at Lostwood NWR along the west side of County Highway 8 (2.7 acres), County Highway 8 crossing upper Lake Audubon (freshwater reservoir on the Missouri River) along a built up dike/berm road crossing of the reservoir (4.0 acres), two crossings of Lake Darling/Upper Souris NWR (freshwater reservoir on the Souris River) also along a built up dike/berm road crossings (14.0 acres—County Highway 26 crossing, 5.4 acres—County Highway 6 at the Darling Lake Dam). There are six overlaps with existing utility corridors: northern crossing under Lake Darling (7.3 acres), upland area above the shoreline proximity to Lake Nettie NWR (alkali lake; 1.4 acres),

Shell Creek and associated wetland just upstream of Parshall Bay on Lake Sakakawea (0.3 acres), two wetlands just off Lake Sakakawea, Van Hook Arm area (0.4 and 1.7 acres), and Idaho Waterfowl Production Area (alkali lake) along a thin strip of ground that separates two water bodies (3.8 acres). Other larger alkali lakes and wetlands with sandy to gravelly, sparsely vegetated beaches not designated as critical habitat in proximity to the Minot action area could also be used as nesting habitat.

Effects of the Action

In accordance with 50 CFR 402.02, effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of all other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action.

Effects of the action are a reasonable prediction of the likely reaction of, and biological effect to, individuals of a species to the environmental changes brought about by implementation of the chosen proposed action. As with any prediction of an animal's response to environmental impacts, there are many uncertainties associated with it. The prediction must be a reasoned prediction that is informed by the best available science, if available. But because scientific literature reports on the results of controlled experiments and purposefully restricts its findings to the conditions and circumstances of the study, its findings can only be used to inform a predicted result from a future proposed action - it cannot determine the outcome with certainty. Therefore, additional information from observations on other species, from other environments and professional judgment from biologists familiar with the species also play a role in arriving at a reasoned prediction.

All stressors identified as potentially affecting the Dakota skipper and piping plover, are described in the following section, in terms of the timing, duration, frequency, magnitude, and location. We also attempt to describe and characterize the expected number, gender, age or life stage, and populations or subpopulations of the Dakota skipper and piping plover for which we anticipate exposure to the stressors.

Project-caused stressors of sufficient magnitude, duration, or frequency, can significantly disrupt the normal behavior/habitat use or can significantly impair essential (breeding, feeding, and sheltering) behaviors by killing or injuring individuals. We attempt to assess whether the Dakota skippers or piping plovers expected to occur in the action area are likely to be exposed to project-induced stressors and if so, to describe the eventual anticipated consequence of this exposure; first to individuals and subsequently to the population those individuals represent. Any population-level impacts (i.e., demographic consequences) will then be addressed in the context of the reproduction, survival, or distribution of the species.

The consequence of exposure to a given stressor is evaluated in terms of whether or not the effect is significant to one or more individuals. We define significance by whether the anticipated effect would be biologically significant on an individual, population, or available habitat. If we

determine, based upon our best judgment, that the effect is not biologically meaningful, measurable, or detectable, we conclude the effect is either discountable or insignificant. If we conclude any stressors are likely to have effects that are either discountable or insignificant, we then will have reached an endpoint in our analysis. But, if we are unable to reach either of these conclusions, we then assume effects to be significant and will discuss the anticipated consequences this could have on the species survival and recovery.

The likelihood of the species' exposure to stressors varies in the number of individuals exposed as well as the number, magnitude, and duration of the stressors and co-occurrence of both the stressor and the species in both space and time. The potential stressors identified in **Table 13** include those that are directly associated with the Project construction, as well as those that linger after the construction due to the modification or destruction of native prairie grasslands or the shorelines of wetlands, rivers, reservoirs or sandbars, that would cause habitat loss, fragmentation, and/or degradation.

Table 13. Summary of the activities associated with the construction, operation, and decommissioning phases of the proposed GBSD Project that may affect the Dakota skipper or piping plover.

Development Phase	**Activities**	**Affected Area**	**Causal Mechanism Potentially Affecting Dakota Skipper and Piping Plover**	**Potential Stressors**
Pre-Construction	Land Surveying, Geotechnical Assessments and Staking	Temporary ROW and Proximity	Vegetation Trampling Vehicle/Equipment Movement Soil/Vegetation Removal	Acoustic Anthropogenic Presence Physical Impact/ Habitat Degradation Habitat Removal
	Natural and Cultural Resource Inventories	Temporary ROW	Vehicle/Equipment Movement Vegetation Trampling	Acoustic Anthropogenic Presence
Construction	Clearing and Disposal of Vegetation	Project Footprint and Proximity, (Smoke, Fire and Airborne Dust Extent)	Vehicle/Heavy Equipment Movement Rig Mat Installation and Mobilization Hand Equipment and Chipping Airborne Dust Destruction of Vegetation Leaks and Spills	Acoustic Anthropogenic Presence Physical Impact Habitat Degradation Habitat Removal Habitat Fragmentation Smoke and Fire Fuels, Chemicals, Hydraulic Fluids

Grading and Topsoil Stripping	Project Footprint and Proximity, Airborne Dust Extent	Vehicle/Equipment Movement Airborne Dust Soil/Vegetation Stockpiling Leaks and Spills	Acoustic Anthropogenic Presence Physical Impact Habitat Degradation Habitat Removal Habitat Fragmentation Fuels, Chemicals, and Hydraulic Fluids
Trenching, Boring, and/or Horizontal Drilling	Project Footprint and Proximity (Blast Area and Airborne Dust Extent)	Vehicle/Equipment Movement Riparian and Non-riparian Crossings; Stream Equipment Crossing Structures Concussive Blast Airborne Dust	Acoustic Anthropogenic Presence Physical Impact Habitat Degradation
Trench Backfilling	Project Footprint and Proximity, Airborne Dust Extent	Vehicle/Equipment Movement Airborne Dust	Acoustic Anthropogenic Presence Physical Impact Habitat Degradation
Materials Testing	Project Footprint and Proximity, Airborne Dust Extent	Vehicle/Equipment Movement Airborne Dust	Acoustic Anthropogenic Presence Physical Impact Habitat Degradation
Regrading and Stabilization	Project Footprint and Proximity, Airborne Dust Extent	Vehicle/Equipment Movement Airborne Dust	Acoustic Anthropogenic Presence Physical Impact Habitat Degradation
Control Facility Construction	Project Footprint and Proximity, Airborne Dust Extent	Vehicle/Equipment Movement Airborne Dust	Acoustic Anthropogenic Presence Physical Impact Habitat Degradation

Reclamation	Seeding	Project Footprint and Proximity, Airborne Dust Extent	Vehicle/Equipment Movement Airborne Dust	Acoustic Anthropogenic Presence Physical Impact Habitat Degradation
	Monitoring and Maintenance	Project Footprint and Proximity, Airborne Dust Extent	Vehicle/Equipment Movement Airborne Dust	Acoustic Anthropogenic Presence Physical Impact Habitat Degradation
	Noxious Weed/Invasive Species Control	Project Footprint, Airborne Dust Extent	Vehicle/Equipment Movement Airborne Dust Toxic liquid/herbicides	Acoustic Anthropogenic Presence Physical Impact Habitat Degradation Chemical Contaminants
Other Project Components	Erosion and Sediment Control Installation	Project Footprint and Proximity, Airborne Dust Extent	Vehicle/Equipment Movement Airborne Dust	Acoustic Anthropogenic Presence Physical Impact Habitat Degradation
	Equipment Refueling	Project Footprint, Airborne Dust Extent	Fuel Spill	Habitat Degradation Contaminants
	Spill Response and Remediation Activities	Project Footprint and Proximity, Airborne Dust Extent	Vehicle/Equipment Movement Airborne Dust Soil/Vegetation Removal	Acoustic Anthropogenic Presence Physical Impact Habitat Degradation Habitat Loss Contaminants

Dakota skipper

Dakota skipper suitable and occupied habitat is present within the Minot portion of the action area. Off-base construction may result in direct mortality of individuals, as well as temporary and permanent loss or alteration of suitable habitat. These effects would be short-term where habitat is

temporarily removed and restoration is successful. Effects would be long-term in areas where restoration does not occur, or in areas that are permanently altered, such as for construction of a communication tower. The conservation measures, discussed above, would be implemented to avoid or minimize many of the adverse effects of the project on the Dakota skipper.

From the information presented in previous sections of this Opinion, the Dakota skipper population or individuals within the population within the action area will encounter stressors during the species' reproductive period. Direct habitat loss is the single, most significant, threat to Dakota skippers (79 FR 63672). This threat is highly detrimental to their survival because Dakota skippers are obligate residents of undisturbed (remnant, untilled) native prairie. In other words, the species has no ability to survive in any other grassland habitat. Most of the suitable habitat will be patchy. Habitat fragmentation in both occupied and expected occupied habitat may occur in some locations based on the proposed Project alignment in North Dakota. With revegetation after construction, habitat fragments may create areas where suitable areas grow together.

Off-base construction activities would have both short-term and long-term effects on the Dakota skipper. The range for Dakota skipper overlaps large segments of the Minot portion of the action area (USFWS 2020a), and Dakota skipper populations are known to occur within the Minot portion of the action area (NDNHI 2020); however, suitable habitat for this species (i.e., native prairies) is a rare component of the grassland vegetation type associated with the action area and likely makes up only a portion of this area (AFGSC 2020). About 3,090 acres of grassland habitat within the Dakota skipper's range could be effected (i.e., cleared) by this project (USGS 2016), primarily as a result of installation of the utility corridors (i.e., the area being considered for placement of project features overlaps 2,360 acres of grassland habitat within the existing utility corridors, 685 acres within the proposed utility corridors, and the remaining within the communication towers, LF and MAF); however, only a portion of these grasslands are likely native prairie and, therefore, would contain suitable habitat for Dakota skipper. The extent of suitable habitats in the area are currently unknown and would be determined during preconstruction surveys.

Potential effects on Dakota skipper from construction of off-base elements of the project include direct mortality, habitat modification, and impacts from noxious weed and invasive plant spread/management and fugitive dust. Direct mortality could result from heavy construction equipment (e.g., backhoes, bulldozers, and other trenching equipment) crushing eggs, larvae, and potentially adult butterflies if construction occurs in occupied habitats. Construction within suitable but currently unoccupied habitat also has the potential to negatively affect the species by removing habitat it could potentially occupy in the future. Dakota skipper, like many other insects, can occupy different patches of native prairie habitats during different years and are considered to have a low site fidelity. Therefore, habitats that are unoccupied one year may be occupied in subsequent years.

Effects of the project on this species also include those associated with fugitive (passing) dust and increased risk of noxious weed and invasive plant spread. Fugitive dust can result in a wide range of effects from reduction of nectar resources by coating flowers in dust to additional mortality through desiccation of eggs, larvae, and adults. The spread of noxious weeds and invasive species by construction equipment can result in the reduction of quality habitat, especially if woody

species are allowed to invade native prairie habitats and outcompete species that are beneficial to the Dakota skipper. Also, the management of noxious weeds through herbicide use has the potential to negatively affect Dakota skipper by inadvertent loss of beneficial plant species or potential mortality caused directly by the herbicide itself.

Despite repeated survey attempts by the USAF, no Dakota skipper have been observed on the Minot AFB and are, therefore, presumed not to be present on-base (USAF 2020). Additionally, on-base construction areas are not planned for any area where potential Dakota skipper habitat is present. Therefore, the on-base construction activities at Minot AFB would have no effect on Dakota skipper.

While the Dakota skipper range overlaps 11 MAFs and 76 LFs, suitable habitat does not exist within the boundaries of the MAFs and LFs because these areas are predominantly composed of small areas of mowed grass, pavement, gravel, and buildings. The temporary one-acre easements required for construction may result in the disturbance of a small amount of native vegetation but would be sited outside suitable Dakota skipper habitat where possible. The workforce hub and laydown areas would be readily sited outside of suitable and occupied Dakota skipper habitat and would, therefore, have no effect on the species.

Each communication tower site would be up to five acres, of which approximately one acre would be cleared and grubbed to provide access to the site for construction and maintenance activities. Most towers would be located in agricultural areas and would, therefore, have no effect on Dakota skipper because they would not impact suitable or occupied habitat. However, the proposed site for Communication Tower #3 occurs within the boundary of the Lostwood NWR, and, although preliminary habitat suitability surveys did not occur at the location of this tower, nearby surveys conducted at an adjacent location where the tower was previously sited identified suitable Dakota skipper habitat (AFGSC 2022). This implies that it is likely that suitable Dakota skipper habitat may occur at the currently proposed location for Tower #3, which is located less than one-quarter of a mile away from the location where the tower was previously sited. Additionally, Lostwood NWR is a wildlife refuge focused on preserving native prairie ecosystems and, therefore, the entire refuge is potentially suitable habitat for the Dakota skipper.

The proposed utility corridors require a 100-ft construction area that would potentially disturb suitable Dakota skipper habitat. Preliminary habitat suitability surveys in 2020 and 2021 evaluated 76 miles of proposed utility corridors for Dakota skipper habitat (AFGSC 2020; 2022). Of the 76 miles evaluated, about 14 miles (out of a total of 944 miles of proposed utility corridor in the Minot portion of the action area) were identified as containing suitable Dakota skipper habitat nearby (AFGSC 2022). However, surveys have only been performed along portions of the proposed utility corridor where ROE has been granted; therefore, additional areas of suitable Dakota skipper habitat may be present along the proposed utility corridors that have yet to be surveyed. Additionally, North Dakota Natural Heritage Inventory (NDNHI) observations of Dakota skipper overlap the proposed disturbance area along the proposed utility corridor in Burke and McHenry counties where surveys have not been conducted (NDNHI 2020).

The construction along existing utility corridors would also require 100-ft-wide construction easements that would potentially disturb suitable or occupied Dakota skipper habitat. Project-

specific comprehensive surveys for Dakota skipper habitat or populations have not been performed along the exiting utility corridors; however, surveys completed by Service (not associated with the project) with data available at the township-scale show overlap of occupied habitat with portions of the existing utility corridor (seven townships). Additionally, observations of Dakota skippers provided by the NDNHI overlap the existing utility corridor in Mountrail County (NDNHI 2020). Existing utility corridors associated with Minot are generally not collocated with currently disturbed landscapes (e.g., roadsides) and are, therefore, more likely to intersect native prairies and suitable Dakota skipper habitat than most other project features, although these areas would contain any remanent effects/disturbances associated with the existing corridors within which they are sited.

Measures that would be implemented to avoid or minimize the extent of impacts on this species would include preconstruction surveys to identify suitable habitats, avoidance of suitable habitat where feasible, and post-construction restoration of suitable habitats that could not be fully avoided. Habitat would be avoided where feasible through micro siting or directional drilling; however, it is likely that project construction would not be able to avoid all identified habitats, particularly along the existing utility corridors and proposed communication towers, which have less siting flexibility than other project elements. Post-construction restoration of disturbed areas to their original ecosystem function would be performed. Restoration actions in these areas would include seeding native prairie species using appropriate seeding techniques (e.g., drill seeding or out-planting) and ongoing monitoring to ensure the success of the restoration effort based on preset success criteria. Because restoration of native prairie can be difficult and is not always successful (Kindscher and Tieszen 1998), a monitoring plan would be implemented to ensure that the restored areas achieve the preset success criteria and that they have a high cover and diversity of native grasses and forbs as well as a low cover of woody species and weeds. Corrective actions (e.g., reseeding and weed control) to ensure successful restoration may be necessary and would be conducted as needed. The effects of fugitive dust and noxious weed and invasive species spread/management would be minimized by employing the following measures, which include: ensuring that any required herbicide use follows all applicable state, local, and federal laws; not using herbicides in occupied or suitable Dakota skipper habitat during the active flight period; and using water application on exposed ground surfaces and dirt/gravel roads during construction activities to minimize potential fugitive dust levels.

Activities associated with decommissioning and disposal of the MMIII missile system within the Minot portion of the action area would have negligible effects on the Dakota skipper, as the increase in truck traffic on the public roads and helicopter surveillance during transport of the decommissioned missiles associated with this action are not expected to have measurable adverse effects on the species.

Piping plover

Noise, human disturbance, presence, and activity, and nighttime lighting from construction activities can temporarily discourage piping plovers from foraging or roosting in adjacent habitat. A study by Wright et al. (2010) indicates that noise elicits some behavioral response in shorebirds at or above 65.5 dBA; and, at or above 72.2 dBA, it results in shorebirds taking flight and moving away from the noise source. Based on anticipated construction noise, piping plovers would be

expected to take flight when construction activities are within 200 ft and to show behavioral responses if located up to 800 ft from construction activities (Wright et al. 2010).

Only five migratory occurrences of piping plover have been observed since 2001 in proximity to the Malmstrom AFB missile field (eBird 2020; MTNHP 2021), therefore we do not expect any adverse effects to piping plover at that location. Suitable migratory stopover habitat is limited to four lakes that are over 200 acres in size that overlap the action area (i.e., Freezout, Priest Butte, Black Horse, and Ackley Lake). Freezout Lake is over 2,500 ft from proposed disturbances associated with construction of the proposed and existing utility corridors, Priest Butte Lake is less than 200 ft from proposed utility corridor, and Ackley Lake is more than 4,700 ft from proposed disturbances associated with LF construction and associated proposed utility corridor construction. A section of proposed utility corridor bisects Black Horse Lake where it is collocated with U.S. Highway 87. Existing activity, noise, and lighting associated with the highway would mask the short-term effects of construction, and additional disturbance from human activity and from nighttime lighting on piping plover would be minor and discountable. Therefore, construction of the proposed and existing utility corridors in the Malmstrom AFB missile field would have discountable effects on piping plover using habitat at Freezout Lake, Priest Butte Lake, Ackley Lake, and Black Horse Lake.

Decommissioning and disposal would occur concurrently with construction and operation of both on-base and off-base elements of the project. Effects from the activities associated with decommissioning and disposal would include noise and human disturbance, at MAFs and LFs, vehicle traffic on existing roads, and activities within existing facilities at Malmstrom AFB. Activity associated with decommissioning and disposal would be indistinguishable from activity occurring during construction and operation. Therefore, operations and maintenance activities at these facilities would have no effect on piping plover. All utility corridors would be buried and the land allowed to revert back to its original use; therefore, these facilities pose no risk to piping plovers during operations.

Operation of the communication towers would create a collision risk for birds as studies have shown that communication towers result in an estimated annual mortality of 6.6 million birds in the U.S. (Longcore et al. 2012). Longcore et al. (2012) showed that more than two- thirds of the estimated migratory bird mortality rate related to communication towers can be attributed to the tallest towers (more than 980 ft above ground level). In addition to tower height, guy wires and obstruction lighting also affect bird collision rates at communication towers.

Gehring et al. (2009) found substantially lower mortality rates at freestanding towers than at guyed towers of the same height (Longcore et al. 2008). Towers equipped with any non-flashing/steady burning lights contribute to more than three times the number of bird fatalities than towers equipped with only flashing obstruction lights (study at towers 380–480 ft above ground level) (Gehring et al. 2009). The proposed communication towers would be up to 300 ft above ground level and would require guy wires. Following the USFWS-recommended measures for communication towers would avoid and minimize some adverse effects on birds, including piping plover, from operation of the towers (USFWS 2021. As communication towers are not sited near piping plover habitat, the recommended conservation measures would be followed, and the Malmstrom AFB missile field is rarely used by piping plovers, the communication towers would

present a long-term collision risk to piping plovers; however, this risk would have a discountable effect on the species.

Piping plovers have been documented in proximity to and overlapping the Minot portion of the action area. Most piping plover habitat within the Minot AFB missile field occurs in areas designated as critical habitat; although there is the potential for piping plovers to use other habitat found along shorelines of larger prairie alkali lakes and wetlands that are not in designated critical habitat but are in proximity to the Minot AFB missile field.

MAF and LF sites are developed sites with maintained landscapes and do not contain suitable habitat for piping plover or for nesting. However, based on mapping, LF G-05 is within one-half-mile of designated critical habitat for the piping plover in North Dakota. Implementation of the mitigation measures, outlined above, would restrict construction activities at this LF during the breeding season (April 1–September 1). The USAF would also avoid critical habitat when siting the temporary one-acre easements associated with the MAF and LF sites.

The proposed and existing utility corridors which cross piping plover habitat would result in short-term minor adverse effects associated with temporary ground disturbance, noise, human presence, and lighting from construction activities. These short-term adverse effects on habitat from off-base construction activity would be insignificant and discountable because proposed utility corridors would be collocated with areas of existing disturbance (existing roads) wherever possible and temporary ground disturbance would be reclaimed. Construction would avoid areas occupied by the species during the nesting season. Communication towers are not sited in habitat and the workforce hub and laydown areas would not be placed in areas supporting federally listed species.

Disturbance associated with construction noise, human activity, and nighttime lighting that occur near occupied habitat would result in short-term effects on piping plover associated with behavioral avoidance of those areas. As discussed for the Malmstrom portion of the action area, shorebirds have been shown to move away from or otherwise been affected by noises above 65 dBA. Piping plover would be expected to take flight when construction activities are within 200 ft and show behavioral responses up to 800 ft from construction. This could affect birds by interrupting foraging activities adjacent to construction, disrupting nest site selection during the breeding season, or by causing adults to temporarily or permanently leave nests with eggs or chicks, exposing them to predation or harsh weather conditions, which would result in nest failures.

Identification of nesting piping plovers during preconstruction surveys and avoidance of active nest sites would avoid or minimize the effects of the project on breeding piping plovers. In addition, the disturbance footprint of the utility corridor would be minimized through sensitive areas such as wetlands and piping plover habitat. Directional drilling would be used to avoid or minimize disturbance to piping plover habitat. In the unlikely event of a potential inadvertent release of drilling fluid during the directional drilling process, the probability that a nest would be collocated in an area where the drilling mud returned is considered low because of the implementation of conservation measures. If suitable habitat could not be avoided during construction activities, alternative utility corridor installation and water crossing methods could remove vegetation, increase sedimentation and soil compaction, and alter hydrology. Piping

plovers using habitat outside of the breeding season may experience short-term insignificant and discountable effects from avoiding construction activities by relocating away from the disturbance to other suitable habitat.

Cumulative Effects

Cumulative effects are those "effects of future State or private activities, not involving federal activities, that are reasonably certain to occur within the action area" considered in this Opinion (50 CFR 402.02). The Service is not aware of any future state, tribal, local, or private actions that are reasonably certain to occur within the Project action area at this time; therefore, no cumulative effects are anticipated.

Conclusion

Regulations direct the Service to evaluate whether a proposed action is likely to jeopardize the continued existence of threatened or endangered species. The continued existence of a listed species depends upon the fate of the populations that comprise them and the continued existence of a population is determined by the fate of individuals that comprise the population. That is, the abundance, reproduction, and distribution of a given species depends upon the collective performance of populations within the geographic extent of the species in the wild. Population performance is typically measured by rates of increase or decrease and is derived as a function of an individual's ability to live, die, grow, mature, migrate, and reproduce.

In this opinion, we have described the status of the Dakota skipper and piping plover at the range wide scale, affected population scale, and the action area scale. We have also described the environmental baseline conditions at the scale of the action area and summarized the effects of the action. We make the determination for these species by considering any anticipated changes in the species' reproduction, abundance, or distribution at the scale of the listed range of the Dakota skipper and NGP breeding population of the piping plover.

After reviewing the current status of the Dakota skipper and piping plover, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the GBSD Project is not likely to jeopardize the continued existence of the Dakota skipper or piping plover. Critical habitat for the Dakota skipper has been designated for the species but does not occur in the action area. Critical habitat for the piping plover has been designated and occurs in a small portion of the Project area associated with Minot AFB, in North Dakota, but the USAF determined that the Project may affect, but is not likely to adversely affect piping plover critical habitat. Our concurrence with that determination is included in the attached informal section 7 consultation response for the Project.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in

any such conduct. “Harm” is further defined (50 CFR § 17.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. “Harass” is defined (50 CFR § 17.3) as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. “Incidental take” is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by USAF as appropriate, for the exemption in section 7(o)(2) to apply. The USAF has a continuing duty to regulate the activity covered by this incidental take statement. If the USAF (1) fails to assume and implement the terms and conditions or (2) fails to require an applicant or contractor to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the USAF must report the progress of the action and its impact on the species as specified in the incidental take statement. [50 CFR §402.14 (i) (3)].

AMOUNT OR EXTENT OF TAKE

The Service anticipates the incidental take of Dakota skippers will be difficult to detect or quantify for the following reasons:

- The presence of individual Dakota skippers is extremely difficult to confirm due to the species’ obscure life cycle, thus incidental take of individuals is too difficult to monitor effectively; and,
- The incidental take of eggs, larvae, pupae, or adults (flight stage) will be difficult track and quantify given the diminutive size and obscurity of individuals, thus the total amount of injury or mortality will be highly uncertain.

However, in instances such as this, incidental take can be approximated by quantifying the spatial extent of the habitat degradation, destruction and/or modification caused by the construction and operation of the Project. The total amount of acres impacted will be determined after the suitable habitat is delineated and impacts quantified.

We anticipate that the maximum amount of Dakota skipper habitat that would be affected, along with all life stages of Dakota skipper occupying the habitat, to be about 175 acres, all within the Minot portion of the action area. The 175 acres is based upon; 1) a maximum of five acres at Communication Tower 3, and 2) the 100-ft wide construction corridor along 14 miles of proposed utility corridors which contain Dakota skipper habitat. The Dakota skippers associated with this acreage of habitat (assumed occupied) would likely be killed or injured during construction or harmed by dusting and the incremental invasive plant encroachment within 40 m of the Project footprint over time due to the operation and maintenance of the Project. The additional habitat degradation from dusting and invasive plant encroachment would create the likelihood that the species would be injured by annoying it to such an extent as to significantly disrupt normal

behavior patterns (breeding, feeding, and sheltering). Specifically, Dakota skippers would be destroyed by construction activities resulting in actual killing individuals which are expected to be present, and individuals associated with the project are expected to be incidentally taken in the form of harm due to the physical modification of habitat caused by:

- ground disturbance and the removal of suitable vegetative habitat;
- deposition of airborne dust and subsequent changes in soil pH;
- and/or the spread of invasive plants that are expected to modify the vegetative structure of reproductive habitat adjacent to the proposed construction.

Collectively, these Project-induced stressors will diminish the carrying capacity of the habitat upon which the species uses for nectaring (during the adult flight stage) and reproductive habitat (for eggs, larvae, and pupae development).

The incidental take of individual Dakota skippers is expected to occur throughout the life of the Project. These expected lethal effects will begin when construction machinery and vehicles will be clearing and grubbing of vegetation and topsoil, cutting, and filling, and grading and surfacing in preparation for construction. Dusting from vehicular traffic associated with the maintenance and production activities, as well as the encroachment of invasive vegetation into Dakota skipper occupied habitat, will continue throughout the operational period of the Project. Deleterious vegetation and soil changes from the construction and operation of the Project are expected to persist even after decommissioning and final reclamation.

Piping plover

The Service anticipates the incidental take of piping plovers will be difficult to detect or quantify for the following reasons:

- Adult piping plovers have the ability to fly away from disturbance and adverse effects to individuals once they have flown will be impossible to determine; and,
- The incidental take of eggs, chicks, or adults (flight stage) will be difficult track and quantify given the diminutive size and obscurity of individuals, thus the total amount of injury or mortality will be impossible to quantify.

We conclude that all piping plover eggs and flightless chicks located within suitable nesting habitat in the utility corridors for the Minot AFB portion of the project will be harmed or die as a result of either nest abandonment due to disturbance and departure of the attending adult or via direct impacts associated with construction activities. Take of adult piping plovers is not anticipated. The incidental take of piping plovers may occur throughout the life of the Project, but these expected effects would only occur during the installation and maintenance of Project related utilities. Take would be minimized by conducting pre-project surveys of the utility corridors where piping plover breeding habitat exists and avoiding work during the breeding season to the maximum extent practicable. If construction in the vicinity of piping plover nests must occur during the breeding season, effects will be minimized by directionally drilling the utility lines beneath piping plover nesting habitat.

EFFECT OF THE TAKE

In the accompanying Opinion, we have determined that the level of anticipated take is not likely jeopardize the continued existence of the Dakota skipper or piping plover. Although we anticipate some incidental take to occur, the implementation of the conservation measures proposed should ultimately result in avoidance and minimization of most adverse effects.

REASONABLE AND PRUDENT MEASURES AND TERMS AND CONDITIONS

All conservation measures including avoidance and minimization measures, status surveys, biological and compliance monitoring, and reporting measures are incorporated herein by reference as reasonable and prudent measures and terms and conditions to address the incidental take of the Dakota skipper and piping plover. No additional reasonable and prudent measures were identified during this consultation.

Monitoring

All construction and reclamation activities would be monitored by a third-party Environmental Construction Inspector Contractor (CIC) in accordance with all provisions, requirements, and stipulations applicable to the Project. The CIC and their staff will be qualified to monitor for ESA-listed species and will work in conjunction with the USFWS regarding their monitoring efforts as necessary. The CIC will provide the Air Force, BLM, USFS, and USFWS routine reports (timing of which to be determined) that will document activities that occurred on the Project as well as any incidences or events (e.g., such as take of listed species). An annual report must be provided to the Service, on the anniversary of this Opinion, summarizing the activities implemented and take that occurred in the previous year, and the cumulative take for the project, if any. The CIC will also be required to produce an End of Construction Project Report that will document all environmental occurrences (e.g., violations of regulatory requirements) documented during the construction and reclamation of the Project. These reports will include information on any take of ESA-listed species that occurs.

The construction contractor shall be required to conduct a worker training program that informs workers and Project personnel of the importance of adhering to all Project environmental management actions and mitigation measures for biological resources. This includes the need to report on Project-related wildlife mortalities to the USFWS as well as applicable state wildlife agencies.

Disposition of Dead or Injured Listed Species

Upon locating a dead, injured, or sick listed species initial notification must be made to the Service's Law Enforcement Office, [Attn: Lizz Darling (lizz_darling@fws.gov), Resident Agent in Charge, 6550 Gateway Rd., Rocky Mountain Arsenal Bldg. 128-B, Commerce City, CO 80022, (303) 729-2284] within three working days of its finding. Written notification must be made within five calendar days and include the date, time, and location of the animal, a photograph if possible, and any other pertinent information. The notification shall be sent to the Law

Enforcement Office, with a copy to the North Dakota Ecological Services Field Office, [Attn: Drew Becker (drew_becker@fws.gov), Supervisor, 3425 Mirian Ave., Bismarck, ND 58501, (701) 355-8512]. Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve the biological material in the best possible state.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. For the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

The Service does not have any conservation recommendations for the Dakota skipper or piping plover.

REINITIATION NOTICE

This concludes formal consultation on the [name the proposed action]. As provided in 50 CFR §402.16, reinitiation of consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this biological opinion or written concurrence; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Please refer to the ECOSphere consultation number, 2022-0054024, in future correspondence concerning this project. Should you require further assistance or if you have any questions please contact Darren LeBlanc, Regional Section 7 Coordinator for the Mountain Prairie Region, at Darren_leblanc@fws.gov or (303) 236-4046.

Steve Smith
Assistant Regional Director for Ecological Services

Date

Literature Cited

Air Force Global Strike Command (AFGSC). 2020. *Habitat Survey Report for Dakota Skipper (Hesperia dacotae)*. Minot Air Force Base Missile Field.

AFGSC. 2022. *Habitat Survey Report for Dakota Skipper (Hesperia dacotae)*. Minot Air Force Base Missile Field.

Armbruster, M.J. 1986. A review of habitat criteria for least terns and piping plovers using the Platte River. National Ecology Research Center, U.S. Fish and Wildlife Service, Fort Collins, Colorado.

Anteau, M.J., T.L. Shaffer, M.H. Sherfy, M.A. Sovada, J.H. Stucker, and M.T. Wiltermuth. 2012. Nest survival of piping plovers at a dynamic reservoir indicates an ecological trap for a threatened population. Oecologia 170: 1167-1179.

Catlin D.H., J.D. Fraser, and J.H. Felio. 2015. Demographic responses of piping plovers to habitat availability.

Catlin D.H., S.L. Zeigler, M.B. Brown, L.R. Dinan, J.D. Fraser, K.L. Hunt, and J.G. Jorgensen. 2016. Metapopulation viability of an endangered shorebird depends on dispersal and human-created habitats: piping plover and prairie rivers. Movement Ecology.

Catlin D.H. 2009. Population dynamics of piping plovers (*Charadrius melodus*) on the Missouri River.

Colorado Natural Heritage Program (CNHP). 2021. Species Occurrences.

Delphey, P., E. Runquist, and C. Nordmeyer. 2017. Plan for the Controlled Propagation, Augmentation, and Reintroduction of Dakota skipper.

Dirks, Brian J. 1990. "Distribution and Productivity of Least Terns and Piping Plovers Along the Missouri and Cheyenne Rivers in South Dakota". *Electronic Theses and Dissertations*.

eBird. 2020. eBird online database of bird distribution and abundance. Cornell Laboratory of Ornithology, Ithaca, NY.

eBird. 2021. eBird online database of bird distribution and abundance. Cornell Laboratory of Ornithology, Ithaca, NY.

Elliott-Smith E., and S.M. Haig. 2009. Data from the 2006 International Piping Plover Census.

Environment Canada. 2006. Recovery Strategy for the Piping Plover (*Charadrius melodus circumcinctus*) in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. Geological Survey Data Series 426.

Faanes, C.A. 1983. Aspects of the nesting ecology of least terns and piping plovers in central Nebraska. Prairie Naturalist 15: 145-154.

Ferland, C.L. and S.M. Haig. 2002. 2001 International Piping Plover Census. U.S. Geological Survey, Forest and Rangeland Ecosystem Science Center, Corvallis, Oregon.

Gehring, J., P. Kerlinger, and A. Manville II. 2009. Communication towers, lights, and birds: Successful methods of reducing the frequency of avian collisions. *Ecological Applications* 19(2):505–514.

Gratto-Trevor, C.L. and S. Abbott. 2011. Conservation of piping plover (*Charadrius melodus*) in North America: science, successes, and challenges. Canadian Journal of Zoology 89(5): 401-418.

Haig, S.M., and L.W. Oring. 1988. Mate, site, and territory fidelity of piping plovers. The Auk. 105(2): 268-277.

Hanski, I. 1999. Metapopulation ecology. Oxford University Press, Oxford

Kindscher, K., and L.L. Tieszen. 1998. Floristic and soil organic matter changes after five and thirty-five years of native tallgrass prairie restoration. *Restoration Ecology* 6(2):181–196.

Kruse, C.D., K.F. Higgins, and B.A. VanderLee. 2002. Influence of predation on piping plover (*Charadrius melodus)* and least tern (*Sterna antillarum*) productivity along the Missouri River in South Dakota. Canadian Field Naturalist 115(3): 480-486.

Lambert, A., and B. Ratcliff. 1981. Present status of the piping plover in Michigan. Jack-Pine Warbler 59:44-52.

Licht, D.S. 2001. Relationship of hydrological conditions and populations of breeding piping plovers. The Prairie Naturalist. 33(4).

Longcore, T., C. Rich, and S. Gauthreaux. 2008. Height, Guy Wires, and Steady-Burning Lights Increase Hazard of Communication Towers to Nocturnal Migrants: A Review and Meta- Analysis. The Auk 125(2):485–492.

Longcore, T., C. Rich, P. Mineau, B. MacDonald, D. Bert, L. Sullivan, E. Mutrie, S. Gauthreaux, R. Crawford, A. Avery, A. Manville II, E. Travis, and D. Drake. 2012. *An Estimate of Avian Mortality at Communication Towers in the United States and Canada*. USDA National Wildlife Research Center - Staff Publications.

McGowan, C.P., D.H. Catlin, T.L. Shaffer, C.L. Gratto-Trevor, and C. Aron. 2014. Establishing endangered species recovery criteria using predictive simulation modeling. Biological Conservation 177: 220-229.

MTNHP (Montana Natural Heritage Program). 2021. Species Occurrences.

North, M.R. 1986. Piping plover nest success on Mallard Island in North Dakota and implications for water management. Prairie Naturalist 18: 117-122.

North Dakota Department of Transportation (NDDOT). 2020. Threatened and Endangered Species – Dakota Skipper.

North Dakota Natural Heritage Inventory (NDNHI). 2020. North Dakota Species of Concern.

Nebraska Natural Heritage Program (NENHP). 2020. Species Occurrences.

Prindiville-Gaines, E.M., and M.R. Ryan. 1988. Piping plover habitat use and reproductive success in North Dakota. Journal of Wildlife Management 52: 266-273. Report 2013–1176, with 4 appendixes, PhD Dissertation. Virginia Institute of Technology. Blacksburg.

Schwalbach, M.J. 1988. Conservation of least terns and piping plovers along the Missouri River and its major western tributaries in South Dakota. M.S. Thesis, South Dakota State University, Brookings, SD.

USAF. 2020. *Integrated Natural Resource Management Plan.* Minot Air Force Base, ND.

USAF. 2022. Biological Assessment for the Ground Based Strategic Deterrent deployment and Minuteman III decommissioning and disposal.

USFWS. 1988. *Great Lakes and Northern Great Plains Piping Plover Recovery Plan.*

USFWS. 2009. Piping plover (*Charadrius melodus*) 5-year review: summary and evaluation.

USFWS. 2014. Dakota Skipper (*Hesperia dacotae*) Fact Sheet.

USFWS. 2018a. 2018 Dakota Skipper (*Hesperia dacotae*) North Dakota Survey Protocol.

USFWS. 2018b. Species Status Assessment Report for the Dakota skipper (*Hesperia dacotae*).

USFWS. 2020a. Environmental Conservation Online System (ECOS) Threatened and Endangered Species Range Data.

USFWS. 2020b. Midwest Region Ecological Services. Dakota skipper (*Hesperia dacotae*).

USFWS. 2021. Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning. U.S. Fish and Wildlife Service, Migratory Bird Program, Falls Church, VA.

USGS. 2016. Landfire Existing Vegetation Type layer.

USGS. 2019. National Hydrography Dataset Website.

Weseloh, D.V.C., and L.M. Weseloh. 1983. Numbers and nest site characteristics of the piping plover in central Alberta, 1974-1977. Blue Jay 41:155-161.

Whyte, A.J. 1985. Breeding ecology of the piping plover (*Charadrius melodus*) in central Saskatchewan. M.S. Thesis, Univ. Saskatchewan, Saskatoon.

Wright, M., P. Goodman, and T. Cameron. 2010. Exploring behavioral responses of shorebirds to impulsive noise. Wildfowl & Wetlands Trust. *Wildfowl* 60:150–167.

Wyoming Natural Diversity Database (WYNDD). 2020. Species Occurrences for Laramie and Goshen counties.

WYNDD. 2021. Species Occurrences for Platte County.

Ziewitz, J.W., J.G. Sidle, and J.J. Dinan. 1992. Habitat conservation for nesting least terns and piping plovers on the Platte River, Nebraska. Prairie Nat. 24:1-20.

Appendix A. Informal Section 7 Consultation Concurrences

RE: U.S. Air Force proposed Ground Based Deterrent System draft section 7 informal consultation

This document transmits the U.S. Fish and Wildlife Service's (Service) informal consultation analysis regarding U.S. Air Force's (USAF) proposal to (1) deploy the Ground Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) system (Project), officially named Sentinel, and (2) decommission and dispose of the Minuteman III (MMIII) ICBM system (the proposed action). The USAF determined that their proposed action "may affect, and is likely to adversely affect" the following federally listed species: the threatened piping plover (*Charadrius melodus*) and Dakota skipper (*Hesperia dacotae)*. The Biological Opinion (Opinion) addressing these species is attached. In addition, the USAF determined their proposed actions "may affect, but is not likely to adversely affect" the following species and designated critical habitat: the threatened Canada lynx (*Lynx canadensis)* and its critical habitat, grizzly bear (*Ursus arctos horribilis*), Preble's meadow jumping mouse (*Zapus hudsonius preblei*), red knot (*Calidrius canutus rufa*), bull trout (*Salvelinus confluentus*) and its designated critical habitat, Ute ladies'-tresses (*Spiranthes diluvialis*), the endangered northern long-eared bat (*Myotis septentrionalis*) and whooping crane (*Grus americana*), and designated critical habitat for the piping plover. The USAF also determined the proposed actions would not jeopardize the continued existence of the candidate monarch butterfly (*Danaus plexippus*), proposed threatened whitebark pine (*Pinus albicaulis*), tricolored bat (*Perimyotis subflavus*), or wolverine (*Gulo gulo*). This analysis was prepared pursuant to section 7(a)(2) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

The Service's analysis is based upon information in the following documents: (1) the 2022 USAF Biological Assessment (BA) and BA amendment; (2) Service Recovery Plans and 5-Year reviews; (3) biological literature cited herein (see Literature Cited); and (4) other information in our files. A complete project record of this consultation is on file at the Service's Mountain Prairie Regional Office (R6).

Project Description

A complete project description is included in the formal section 7 consultation for this action. A short summary description is provided here for the informal consultation analysis.

The purpose of the proposed action is to replace all land-based MMIII ICBMs deployed in the continental United States with GBSD ICBMs. All components of the MMIII missile would be replaced. All missile alert facilities (MAFs), launch facilities (LFs), communication systems, infrastructure, and technologies would be modernized or replaced as necessary to support the GBSD weapon system. The existing MAFs and LFs would be updated extensively to a completely refurbished condition to meet the requirements of the GBSD system. GBSD deployment activities would not include generating or disposing of nuclear material, and the number of land-based nuclear missiles in the continental United States would not change.

Deployment would primarily occur at F.E. Warren Air Force Base (AFB) in Wyoming; Malmstrom AFB in Montana; and Minot AFB in North Dakota. Maintenance, training, storage,

and support actions would occur at these three main operating bases as well as at Hill AFB and Utah Test and Training Range (UTTR) in Utah, Camp Guernsey in Wyoming, and Camp Navajo in Arizona. Elements of the project would include the following:

- On-base elements of the GBSD deployment, including construction, modification, operation, and maintenance of on-base facilities and infrastructure.
- Off-base elements of the GBSD deployment, including updating MAFs and LFs to completely refurbished condition, establishing new utility corridors, utility work within existing utility corridors and easements, constructing new communication towers, and deploying and maintaining the GBSD weapon system.
- Decommissioning and disposing of the MMIII weapon system.

Table 2 (in the attached Opinion) outlines which of the elements of the proposed action would be implemented at each installation and a detailed discussion follows the table. All elements would be implemented at F.E. Warren, Malmstrom, and Minot AFBs. Hill AFB would provide support facilities and MMIII decommissioning activities; Camp Guernsey would provide on-base training and support activities; and UTTR and Camp Navajo would support storing and demilitarizing MMIII missiles. General Project conservation measures are also listed in the accompanying Opinion. Species specific conservation measures for the species in this informal consultation are listed with the species analysis below.

GBSD system deployment and MMIII disposal activities are projected to begin in late 2023, starting at F.E. Warren AFB, then at Malmstrom AFB, and finally at Minot AFB. Activities at F.E. Warren, Malmstrom, and Minot AFBs and throughout their missile fields would be implemented in phases, either concurrently or consecutively. However, the USAF would maintain its warfighter commitment and nuclear readiness posture at all times. Deployment of the GBSD weapon system would be completed by the mid-2030s, and GBSD would remain viable until at least 2075.

Species and Critical Habitat Effects Analysis

Canada lynx and designated critical habitat

The USAF determined that the proposed project is not likely to adversely affect the federally threatened Canada lynx or its designated critical habitat; (USAF 2022). This species is only expected to occur within the Malmstrom portion of the action area. The Malmstrom area overlaps with areas where Canada lynx may be present (USAF 2022). Construction activities within existing and proposed utility corridors and one existing launch facility would affect up to 284 acres of potentially suitable, but currently unoccupied habitat (USAF 2022). This acreage represents less than 0.2 percent of the potential lynx habitat within the affected lynx analysis units. These areas would be revegetated following construction, with the time for habitat recovery being unknown, at this time, and variable depending on the extent of tree removal.

The primary area of concern for Canada lynx within the action area is on U.S. Forest Service (USFS) lands in the far western portion of the Malmstrom area where it overlaps occupied and designated critical habitat for the species. A total of 4.6 miles of utility corridor is proposed within suitable and occupied habitat, which would affect up to 68 acres. This acreage represents less than

0.3 percent of the potential lynx habitat within affected lynx analysis units. Regarding effects due to utility lines, the USAF indicates that the amount of habitat affected in sensitive areas could be reduced by up to 75 percent by reducing the width of temporary construction easements (USAF 2022). These areas would be revegetated following construction, with the time for habitat recovery being variable depending on the extent of tree removal.

Areas designated as critical habitat for lynx include large boreal forest landscapes with adequate densities of snowshoe hare, which provide food for lynx, and with persistent deep, fluffy snow. These habitat characteristics give lynx a competitive advantage over bobcats and other hare predators. Not all critical habitat is currently occupied by the species, but the acres designated as critical habitat are needed for its recovery. There are five critical habitat units for lynx that generally correspond with the resident breeding populations; the critical habitat units are in northern Maine (Unit 1), northeastern Minnesota (Unit 2), the Northern Rockies (northern Idaho and northwestern Montana) (Unit 3), the North Cascades of Washington (Unit 4), and the Greater Yellowstone area of Wyoming and Montana (Unit 5) (79 FR 54782, September 12, 2014).

The Canada lynx critical habitat primary constituent element (PCE) (71 FR 66008) that is essential to their conservation in the contiguous United States is boreal forest landscapes that support a mosaic of differing successional forest stages containing: (a) presence of snowshoe hares and their preferred habitat conditions, which include dense understories of young trees, shrubs or overhanging boughs that protrude above the snow; (b) winter snow conditions that are generally deep and fluffy for extended periods of time; and (c) sites for denning that have abundant coarse woody debris, such as downed trees and root wads.

Not all boreal forest landscapes supporting a mosaic of differing successional forest stages contain all the essential PCEs for lynx in adequate quantities and spatial arrangements on the landscape to support the population over time. Therefore, critical habitat must contain the presence of snowshoe hares and their preferred habitat conditions, including dense understories of young trees, shrubs, or overhanging boughs that protrude above the snow, and mature multistoried stands with conifer boughs touching the snow. Critical habitat must also include winter conditions that provide and maintain deep fluffy snow for extended periods of time and sites for denning that have abundant coarse woody debris, such as downed trees and root wads. Additionally, critical habitat must contain matrix habitat or other habitat types that do not support snowshoe hare (e.g., hardwood forest, dry forest, and non-forest). Matrix habitat must occur between patches of boreal forest in close juxtaposition (at the scale of a lynx home range) so lynx are likely to travel through it while accessing patches of boreal forest within a home range (79 FR 58411, September 12, 2014).

Lynx designated critical habitat overlaps approximately 8,500 acres of the Malmstrom portion of the action area, of which about 7,200 acres occurs on lands managed by USFS. The Northern Rockies critical habitat unit (Unit 3), which includes a small portion of northeastern Idaho and northwestern Montana, is crossed by the proposed utility corridor in Lewis and Clark County in the southwestern part of the Malmstrom portion of the action area

Approximately 10.7 miles of proposed utility corridor would cross Unit 3 of designated critical habitat. Unit 3 totals more than 6,000,000 acres. The proposed action would affect up to 200 acres of designated critical habitat; including 28 acres of snowshoe hare/lynx foraging and denning

habitat (PCE 1, a and 1, c), 40 acres of lynx denning habitat (PCE 1, c), and 132 acres of matrix habitat (those portions of the forest landscape that are suitable for lynx movement but do not contain PCE 1, a or 1, c). Clearing of vegetation for utility line construction would alter conditions within snowshoe hare/lynx foraging habitat (PCE 1, a). Such effects would be temporary, although potentially long-term, and could be long-term beneficial in cases where closed-canopy forest is opened up allowing improved understory conditions to develop. The proposed action could reduce the availability of denning sites, but, given the small amount and linear nature of the habitat to be affected and availability of denning sites in adjacent areas, we do not expect this to have a substantial effect on the value of critical habitat within and adjacent to the action area.

Considering that: 1) most effects to Canada lynx potential habitat would occur in areas not currently occupied by the species, 2) the amount of habitat affected would be very small relative to the amount available within the affected lynx analysis units and the affected critical habitat unit, 3) the amount of habitat affected will likely be further reduced during implementation through application of proposed minimization measures, and 4) Canada lynx are a wide-ranging species and would be free to leave construction areas while work is ongoing, such that disturbance effects within the small and mostly linear project areas would be minimal; we have determined that the effects of the proposed action to Canada lynx would be insignificant and therefore concur with USAF's determination. In addition, the Projects impacts to designated critical habitat PCEs, which is limited to about 200 acres out of more than 6,000,000 acres in Unit 3, would result in an insignificant reduction in critical habitat within this Unit. Therefore, we concur with the USAF's determination that the Project may affect, but is not likely to adversely affect lynx critical habitat.

Grizzly bear

The grizzly bear is only expected to occur within the Malmstrom portion of the action area. The central and western portions of the Malmstron area overlap areas where grizzly bears may be present (USAF 2022). The vast majority of work in areas where grizzly bears may be present would occur in Zone 3 of the North Continental Divide Ecosystem (NCDE Subcommittee 2020). Although grizzly bears may be present in these areas, they are expected to be dispersing males and subadults and habitat modification and disturbance-related effects to such individuals, as would occur under the proposed project, are expected to be insignificant. Furthermore, the USAF has proposed a suite of minimization measures to reduce the potential for human-bear conflicts, including requiring bear safety training for project personnel, requiring food and trash management to minimize attraction of bears, and requiring defensive driving techniques to minimize the potential for collisions with bears (USAF 2022). We also note that the majority of work would involve updates to existing facilities in existing disturbed areas, many of which are currently occupied by people and are likely to be avoided by grizzly bears (USAF 2022).

The primary area of concern for grizzly bears within the action area is on USFS lands in the far western portion of the Malmstrom area where it overlaps the NCDE Grizzly Bear Recovery Zone (Recovery Zone). Unlike Zone 3, the Recovery Zone is managed for continuous occupancy by grizzly bears, including females with dependent young (NCDE Subcommittee 2020). USFS management of this area, to minimize effects to grizzly bears, centers on minimizing the effects of motorized human access by limiting open motorized route density (OMRD) and total motorized route density (TMRD) and maximizing the amount of secure core habitat. USAF proposes

construction of 20 miles of new utility corridor, potential updates to 11 miles of existing utility corridor, and updating one launch facility within the Recovery Zone. The proposed new utility corridor would follow an existing road and would not require new permanent roads. Furthermore, new temporary road construction is not expected to be needed within the Recovery Zone; and in the unexpected event that new temporary roads are needed, they are not expected to increase the open or total motorized route densities or reduce the amount of secure core habitat to the point at which adverse effects would occur.

Considering that: 1) the majority of proposed activities within areas where grizzly bears may be present would occur in existing disturbed/developed areas; 2) the majority of proposed activities within areas where grizzly bears may be present would be outside of areas where resident adult females are expected to occur; 3) activities within areas where resident adult females are expected to occur would be limited in scope such that they are not expected to increase the open or total motorized route densities or reduce the amount of secure core habitat to the point at which adverse effects would occur, and, 4) the USAF has proposed minimization measures to be implemented during construction that we expect will be effective in avoiding attraction of bears and human-bear conflicts; we have determined that the effects of the proposed action to grizzly bears would be insignificant and therefore concur with USAF's may affect, not likely to adversely affect determination.

Northern long-eared bat

The northern long-eared bat is a medium-sized, light-to-dark brown bat with long ears. In January 2016, the Service released its final rule designating the northern long- eared bat as threatened under ESA Section 4(d) (81 FR 1900, January 14, 2016). In March 2021, a court ruling remanded the northern long-eared bat threatened listing for this species and ordered the Service to determine whether the northern long-eared bat warrants listing as endangered. The northern long-eared bat was up-listed from threatened to endangered status on November 30, 2022, and the 4(d) rule is no longer in effect for this species.

The northern long-eared bat primarily roosts in forested habitats or human-made structures within 50 miles of a wintering site during its active season from April 15 to November 15 (USFWS 2014). According to USFWS (2020c), suitable summer habitat for the species comprises forests and wood lots that contain potential roosts, including live trees or standing dead trees, or "snags," that are three inches or more in diameter at breast height (dbh) with shedding bark, cracks, crevices, and/or hollows. Summer habitat also has linear features that include fences, riparian forests, and wooded corridors (USFWS 2020c). Both the forests and riparian areas provide foraging habitat for the species and day roosts provide important shelter from the environment and adverse weather, resting places during migration or regional movements, protection from predators, social interaction, and a space for the rearing of young (Kunz and Fenton 2003). Because northern-long eared bats rarely travel more than 1,000 ft from forested habitat, any suitable roosting areas must be in close proximity to each other to provide connectivity for the species (USFWS 2020c). Evidence suggests that northern long- eared bats select forest patches with greater connectivity to other patches and larger forest patches with a closed canopy (i.e., mature forests) (USFWS 2015b); however, most of the studies conducted on this species occurred in the eastern portion of the range; habitat studies from the western part of their range are lacking.

Although human- made structures are not the long-eared bat's preferred habitat and they must contain some form of forest in close proximity, they can provide an important roosting resource for the species.

The species is known to be present in North Dakota during the breeding and migratory seasons. However, hibernacula have not been documented in North Dakota. Northern long-eared bats primarily roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees in the summer. The pupping season occurs in June and July. Summer survey guidelines for the northern long-eared bat are identical for those established for the Indiana bat (*Myotis sodalis*). White nose syndrome, a fungus affecting hibernating bats, is considered the most significant threat to this species, but individuals may be harmed by other activities such as modifications to hibernacula, timber harvest, human disturbance, and collisions with wind turbines.

The northern long-eared bat has been acoustically confirmed to occur at Camp Guernsey, although no roosts or hibernacula have been identified (WYARNG 2020). Tree-dominated vegetation types represent potential roosting habitat at Camp Guernsey, but account for less than one acre (USGS 2016). Construction-related activities that include stressors, such as habitat modification, noise, human disturbance, presence, and activity, and artificial lighting, would occur during the species' active season (April–October). Activities conducted outside that season (during hibernation, November–March) would not affect the species as they are not active and no hibernacula for this species are known to occur on or near Camp Guernsey. Proposed on-base construction would not be conducted in the species' preferred habitat and would not include tree removal. Although construction would occur during the species active season, it would occur only in marginal habitat and no roosts or hibernacula are known to occur at Camp Guernsey.

Approximately one percent of the Minot portion of the action area contains northern long-eared bat habitat (i.e., trees, wetland, and riparian areas) (USGS 2016); however, the range for the species overlaps all seven counties associated with the project. Habitat is scattered throughout this portion of the action area, although no hibernacula have been identified anywhere in the state. The species primarily uses these natural habitat types but can also use artificial habitats, such as bridges or buildings, for roosting and foraging during the active season (April–October).

The MAF and LF sites throughout the Minot AFB missile field are located in areas that have been previously altered and modified. No construction activities at these locations would occur in forested habitat used by the species, and sensitive bat habitats (wetlands and riparian areas) would be avoided during the siting of the one-acre easements to minimize the disturbance of roosting or foraging bats. To avoid disturbance to northern long-eared bats (and other bat species) roosting in artificial structures such as buildings, visual bat surveys would be conducted prior to demolition activities. A total of approximately 10 acres of forested habitat occurs within 330 ft of all MAF and LF sites. Roosting and foraging bats using the nearby habitat could be disturbed by noise; however, these areas already occur in developed areas and the bats are likely habituated to this disturbance, or already avoid these areas.

Construction of the communication towers would directly impact approximately 1 acre of forest, and noise disturbance has the potential to occur within 330 ft of approximately 20 acres of

northern long-eared bat habitat. The towers would be sited on newly acquired property in undeveloped areas without existing disturbance. Areas identified for construction or tree removal activities that include northern long-eared bat habitat would require preconstruction surveys to minimize effects on roosting or foraging bats. In areas where northern long-eared bat has been documented, construction activities that involve tree removal would not be conducted during the pupping season (June 1–July 31).

Construction activities associated with proposed utility corridors have the potential to directly affect approximately 8 acres of northern long-eared habitat, and 2,560 acres of forest occur within 330 ft of where the activities would occur. Construction activities associated with existing utility corridors have the potential to directly affect approximately 10 acres of northern long-eared bat habitat, and 480 acres occur within 330 ft of where the activities would occur. Upon completion of the work on the corridors, disturbed areas would be topographically restored and reseeded after utility installation. In areas from which forested habitat would be removed, construction activities would have long-term effects on northern long-eared bat as restoration of the modified habitat would take many years.

The short-term effects of noise from construction activities on foraging and roosting bats is similar to those from on-base construction activities at Camp Guernsey. According to AFCEC (2019), an estimated 65 bridges occur within 1,000 ft of roosting habitat (USGS 2016) and within 330 ft of construction activities within the Camp Guernsey portion of the action area. Bridges located along proposed and existing utility corridors could harbor day- or night-roosting northern long-eared bats. The effects of noise resulting from construction activities associated with proposed and existing utility corridors would be of limited (less than 330 ft at 62 dB) (Schaub et al. 2008, Luo et al. 2014). Also, bats typically occupy portions of bridges where high frequency sound is strongly attenuated (Schaub et al. 2008). Northern long-eared bats present in proximity to roadways are expected to be tolerant of existing noise levels (USFWS 2016).

The use of artificial light can displace foraging and commuting bats, as well as hinder their emergence from roost sites (Stone et al. 2015). Because temporary artificial light installation during construction would occur in previously developed locations, some that already have nighttime lighting, the effects on bats from artificial lighting would be short term.

MMIII decommissioning and disposal activities at Minot would have short-term discountable effects on northern long-eared bats as these activities would occur only within previously disturbed or developed areas; no modification of habitat would occur; and additional truck traffic on public roads as well as helicopter surveillance during missile transport would be negligible compared to existing conditions.

The increase in anthropogenic disturbance at Minot from noise, nighttime lighting, and human disturbance, presence, and activity associated with the decommissioning and disposal of the MMIII weapon system would affect northern long-eared bats as described previously. As decommissioning and disposal activities gradually decline, there would be an overall reduction in their effects; thus, they would have long-term discountable effects on the species.

The following conservation measures would be implemented for the northern long-eared bat:

- Conduct preconstruction surveys in identified habitat within 1,000 ft of proposed construction activities. If the species is determined to be present, construction activities that require removal of trees more than 3 inches diameter at breast height would not be conducted from June 1–July 31. No tree removal activities would be conducted within one-quarter mile of hibernacula at any time of year. Locations of hibernacula are based on known hibernacula from existing data sources.
- Avoid clearing of spring staging and fall swarming habitat within a 5-mile radius of known or assumed bat hibernacula during the staging and swarming seasons (April 1–May 15 and August 15–November 15, respectively).
- Limit night lighting during construction activities within one- quarter mile of known northern long-eared bat hibernacula. Angle down permanent and temporary outdoor lighting of facilities away from suitable habitat to prevent interference with the species' foraging and roosting activities.

Based on the information provided above, the Service has determined that effects to the northern long-eared bat would be insignificant. No hibernacula or winter use have been documented in the action area. Habitat modification from construction activities at Camp Guernsey would not be conducted in preferred habitat, and less than 20 acres of northern long-bat habitat would be directly affected by tree removal at Minot. Noise and artificial lighting from construction activities may disturb roosting and foraging bats, but these activities would primarily occur in areas with existing development that currently contain elevated noise and artificial light levels. Although bridges and other artificial structures within the action area may harbor day- and night- roosting bats, the noise from construction would be limited and bats within proximity to roadways are expected to be tolerant of noise. Lastly, the increase in human activity during daylight hours associated with construction activities already occurs within developed areas of the action area.

Preble's meadow jumping mouse

Preble's meadow jumping mouse is a small rodent associated with riparian habitats that was federally listed as a threatened species in 1998 (63 FR 26517, May 13, 1998). Preble's is a subspecies of the meadow jumping mouse (*Zapus hudsonius*). Critical habitat was designated for Preble's in 2010 along the edge of Colorado's Front Range (75 FR 78430, December 15, 2010), which is outside of the action area for this Project.

Preble's are found from high plains to foothill riparian habitats in or near stream channels (large perennial rivers to small ephemeral drainages). They are also present in wetlands, including wet meadows or wet-to-mesic hayfields, and areas within 300 ft of the 100-year floodplain of rivers and creeks (USFWS 2004, 2018b). Preble's habitat often includes dense, herbaceous riparian vegetation, which might have an overstory canopy layer, as well as upland grasslands adjacent to riparian habitats (USFWS 2018b). Preble's use upland habitat at night for foraging and rest in daybeds in shrubs or bunch grasses during the day in the riparian zone. Upland habitats are variable and can range from open grasslands to forested woodlands (Wrigley et al. 2012).

Preble's habitat (riparian corridors and adjacent uplands) is present on F.E. Warren AFB and the species has been documented, though the identification of the species has not been genetically

confirmed so it is considered “suspected”, along the 1.4-mile stretch of Crow Creek, which flows through the lower third of the base. Approximately 1.3 acres of USAF-mapped Preble’s potential habitat overlaps the proposed retention pond site along Crow Creek and is within an area the Base’s Integrated Natural Resources Management Plan identifies for Preble’s restoration efforts (USAF 2020). The USAF has committed to ensuring the final design and siting of the retention pond is located outside Preble’s suitable habitat. Most proposed on-base facilities are separated from Preble’s potential habitat by existing military development and associated roads and railroads. Preble’s would not be present where these facilities are sited because of the distance from Preble’s potential habitat and the fragmentation from existing disturbance; therefore, facility construction associated with these elements would have negligible effects on Preble’s.

Measures to control contamination, erosion, and sedimentation; limit construction to occur during the species’ hibernation period (November 1–April 30); and discouraging Preble’s from hibernating within the construction area by trimming woody vegetation to the ground level with hand tools in late summer (September) prior to ground disturbance would minimize adverse effects (USFWS 2020b). In the unlikely event suitable habitat could not be avoided with directional drilling at the limited locations where project elements overlap with the species, the implementation of alternative utility corridor installation methods could remove vegetation, increase sedimentation and soil compaction, and alter hydrology during the hibernation period.

Disturbance associated with noise, human presence, and nighttime lighting during construction activities at the proposed utility crossings and retention pond would cause Preble’s using occupied habitat in proximity to the project elements to temporarily avoid those areas until construction is complete. Mice both vocalize and subsequently hear primarily in frequencies between 10 kHz and 80 kHz (Gleich and Strutz 2012). Sound from non-impact construction equipment, which is primarily below 8 kHz, is outside the primary hearing range of mice (EPA 1971). Lower frequency sound audible to humans may be heard to a lesser extent or not at all by mice (Reynolds et al. 2010). Sound volume between 88 dB and 90 dB (unweighted) focused around the 10 kHz frequency produces avoidance behavior in laboratory mice (Mollenauer et al. 1992). These levels are a conservative threshold for behavioral effects in mice from construction equipment producing noise in the high frequency ranges (above 10 kHz). These noise volumes would be expected within approximately 50 ft from construction activities for high-frequency-producing construction equipment. Individual mice beyond this range of 50 ft would also be less likely to have behavioral responses from construction equipment noise. Construction activities are not anticipated within 50 ft of occupied Preble’s habitat because the USAF would be avoiding those areas. Noise from construction equipment, if in the hearing frequency of Preble’s and in proximity to occupied habitat, would cause Preble’s to hide underground or vacate the area.

Nighttime lighting would be used as needed during construction activities. If the lighting is situated close to occupied Preble’s habitat, the lighting would expose Preble’s to additional predation pressure and reduce the amount of time the species has to find food, shelter, or mates for reproduction. Nighttime lighting during construction activities near Preble’s suitable habitat would be limited to the species’ hibernation period (November 1–April 30). Therefore, nighttime lighting would have no effect on the species. Human presence in proximity to occupied habitat would result in similar behavioral effects on Preble’s.

The following conservation measures would be implemented specifically for Preble's:

- Construct the retention pond at F.E. Warren AFB outside of Preble's meadow jumping mouse suitable habitat.
- Implement the appropriate measures found in the Recommended Conservation Measures Preble's Meadow Jumping Mouse, created by the Service on March 2020. This three-page document includes conservation measures such as avoiding and minimizing permanent and temporary effects on riparian and adjacent upland habitats; controlling contamination, erosion, and sedimentation; burying and directionally drilling utility cables and pipes underneath suitable habitat; implementing a habitat restoration plan; and limiting night lighting and construction activities to the hibernation period (November 1–April 30).
- If suitable habitat cannot be avoided during construction activities through micrositing or measures such as burying and directional drilling, conduct preconstruction surveys for Preble's outside of the hibernation period. If Preble's is documented during the surveys, flagging areas within 500 ft of active Preble's meadow jumping mouse population areas to be avoided during construction activities and promptly removing flagging after construction activities have been completed. If construction activities are not avoidable in these areas, conduct construction activities only during the species' hibernation period (November 1–April 30).
- Prior to ground disturbance activities within occupied habitat or presumed occupied habitat, trim woody vegetation to ground level using hand tools, preferably in the late summer, to discourage Preble's from hibernating in construction areas. Remove and dispose of cut vegetation in an area outside of those suitable habitats and associated uplands within 500 ft. Clear any vegetation within suitable habitat before the species starts preparing for hibernation (September) and during daylight hours to avoid disrupting Preble's meadow jumping mouse nocturnal activities.

Preble's are documented on F.E. Warren AFB, but not in proximity to its missile field. With the final siting of the retention pond placed outside of Preble's suitable habitat at the AFB and directional drilling beneath suitable habitat for the installation of on-base proposed utility corridors, effects from construction and operations of on-base facilities and utility corridors would be discountable on Preble's. Off-base construction within proposed and existing utility corridors would avoid Preble's suitable habitat if identified during preconstruction habitat surveys. Based on this information, the Service concurs with the USAF determination that implementation of the general and species-specific avoidance and conservation measures, described in the Opinion and above, would ensure that effects on Preble's habitat and individuals would be insignificant.

Red Knot

The rufa subspecies of the red knot (hereafter red knot) is a medium- sized, highly migratory shorebird found in the western hemisphere (USFWS 2020d). It was federally listed as threatened under the ESA in 2014 (79 FR 73705, December 11, 2014). No critical habitat has been designated within the United States. Both the Malmstrom and Minot AFB portions of the action area are located within the red knot's migration route within the Central Flyway, however only the Minot portion of the action area contains stopover habitat with the potential to support the species. The species is not known to occur within the F.E. Warren, Hill AFB, or UTTR portions of the action area.

During migration and winter, red knots require habitat relatively free of human disturbance, presence, or activities. In general, habitat used during migration and on winter grounds for foraging and roosting includes coastal marine and estuarine features, but also may include inland saline lakes (USFWS 2020d; ECCC 2017). The species uses sandy beaches, sandspits, sandbanks, tidal mudflats, restingas (i.e., intertidal, wave-cut, rocky platforms), intertidal rocky flats, and salt marshes with roughly two inches of standing water or less as stopover sites (USFWS 2020d; ECCC 2017; Niles et al. 2008). Red knots winter along sandy beaches but also use rocky shorelines, intertidal rocky flats, peat banks, salt marshes, rice fields, brackish lagoons, and tidal mudflats (USFWS 2020d; ECCC 2017). The entire global population of the red knot is known to breed in northern Canada (USFWS 2020d; ECCC 2017).

Construction of off-base elements would result in ground disturbance, noise, and human disturbance, presence, and activity that could cause red knot to temporarily avoid suitable habitat during its migratory seasons. Ground disturbance within wetlands would be avoided to the maximum extent possible by implementing the general conservation measures discussed in the Opinion.

Noise, human disturbance, presence, and activity, and lighting from construction activities near habitat can temporarily discourage red knots from foraging and roosting. Shorebirds have been shown to move away from or otherwise be affected by noises above 65 dBA. Within 200 ft of construction activity, individual red knots would temporarily take flight and would either return once activity ceased or permanently leave the habitat and relocate to another habitat further away from the construction.

Freezout Lake Wildlife Management Area (WMA) has open water and wetland habitats that occur within 800 ft of proposed disturbances at several places throughout the missile field and individual red knots using these habitats may be temporarily displaced during construction. Construction of off-base elements would have a short-term effect on red knots from the temporary displacement or avoidance of habitat; this effect is expected to be insignificant given the rare occurrence of this species in the Malmstrom portion of the action area.

Based on the information presented above, the Service concurs that the red knot is extremely unlikely to occur in the Project area; therefore, potential effects to this species are discountable.

Bull trout

The bull trout is a member of the Salmonidae family that exhibits both resident and migratory life forms. Resident forms can grow up to 10 inches long, and migratory forms can grow up to 35 inches long and weigh 32 pounds. Bull trout have olive green to bronze backs with yellow, orange, or salmon-colored spots (USFWS 2021). It is federally listed as threatened under the ESA within the contiguous 48 states (64 FR 58910, November 1, 1999).

Bull trout require cold water habitat of less than 54 degrees Fahrenheit (°F) and are rarely found in temperatures higher than 59–64 °F. They require clear spawning and rearing substrate, free of fine sediment. Bull trout require complex instream habitat, including pools, overhanging banks, and large wood. Finally, bull trout require habitat connectivity between spawning and rearing habitat

upstream and foraging, migration, and overwintering habitat downstream (MTFWP and MTNHP 2021; USFWS 2015c, 2021b). Resident and juvenile migratory bull trout feed on insects, macro-zooplankton, and small fish. Adult migratory bull trout feed on smaller fish (MTFWP and MTNHP 2021; USFWS 2015a).

Resident fish spend their entire lives in their spawning and rearing tributary streams or nearby. Migratory fish spawn in tributaries where juveniles rear for 1–4 years and then migrate to larger rivers (fluvial life forms) or lakes (adfluvial life forms), where they spend their adult lives (MTFWP and MTNHP 2021; USFWS 2015a). In the Blackfoot River, bull trout populations predominantly demonstrate fluvial life history forms—they spawn and rear in tributaries and migrate to larger rivers for adult life stages (USFWS 2015c). Bull trout spawn in cold, low-gradient streams with clean substrate in summer and fall and fry emerge 7–8 months later (MTFWP and MTNHP 2021; USFWS 2015c).

The Service has designated critical habitat for bull trout in the states of Idaho, Montana, Nevada, Oregon, and Washington (75 FR 63898, October 18, 2010). The Service identified nine PCEs for bull trout critical habitat (75 FR 2279, January 14, 2010):

(i) Springs, seeps, groundwater sources, and subsurface water connectivity (hyporheic flows) to contribute to water quality and quantity and provide thermal refugia.
(ii) Migratory habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including but not limited to permanent, partial, intermittent, or seasonal barriers.
(iii) An abundant food base, including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish.
(iv) Complex river, stream, lake, reservoir, and marine shoreline aquatic environments and processes with features such as large wood, side channels, pools, undercut banks and substrates, to provide a variety of depths, gradients, velocities, and structure.
(v) Water temperatures ranging from 2 to 15 °C (36 to 59 °F), with adequate thermal refugia available for temperatures at the upper end of this range. Specific temperatures within this range will vary depending on bull trout life-history stage and form; geography; elevation; diurnal and seasonal variation; shade, such as that provided by riparian habitat; and local groundwater influence.
(vi) Substrates of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount (e.g., less than 12 percent) of fine substrate less than 0.85 mm (0.03 in.) in diameter and minimal embeddedness of these fines in larger substrates are characteristic of these conditions.
(vii) A natural hydrograph, including peak, high, low, and base flows within historic and seasonal ranges or, if flows are controlled, they minimize departures from a natural hydrograph.
(viii) Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.
(ix) Few or no non-native predatory (e.g., lake trout, walleye, northern pike, smallmouth bass; inbreeding (e.g., brook trout); or competitive (e.g., brown trout) species present.

A proposed utility corridor within the Malmstrom action area is the only project element in the vicinity of bull trout critical habitat. In the Blackfoot River, designated critical habitat is within approximately one-tenth of a mile of the proposed utility corridor (USFWS 2021). The proposed utility corridor would follow Montana Highway 200 near the Blackfoot River in Montana; this is the only Project element with potential to affect bull trout or its critical habitat. The proposed utility corridor would be located to the north of, and as close as possible to, Montana Highway 200, while the Blackfoot River is south of the highway in this area. The proposed utility corridor would not cross the Blackfoot River, but would cross three perennial and one intermittent tributary. Bull trout are very sensitive to the effects of sediment and turbidity that may result from construction activities. Therefore, the USAF has proposed to avoid any in-water work within these tributaries of the Blackfoot River by using directional drilling techniques (USAF 2022).

Considering that there is no proposed work within the Blackfoot River (which is known to be occupied by, and is designated critical habitat for, the bull trout) and the USAF has proposed to avoid in-water work within its tributaries that could otherwise contribute sediment to the Blackfoot River, we have determined that effects to this species and its critical habitat would be too small to be meaningfully detected or measured or would be avoided completely and are therefore considered insignificant or discountable.

Ute Ladies'-tresses

Ute ladies'-tresses is a federally threatened perennial orchid. No critical habitat is designated for the species. Ute ladies'-tresses is endemic to moist soils near wet meadows, springs, lakes, and perennial streams where it colonizes early successional point bars or sandy edges. The elevation range of known occurrences is 4,200 to 7,000 feet. Soils where Ute ladies'-tresses have been found typically range from fine silt and sand to gravels and cobbles, as well as to highly organic and peaty soil types. Ute ladies'-tresses are not found in heavy or tight clay soils or in extremely saline or alkaline soils. Ute ladies'-tresses typically occurs in small, scattered groups found primarily in areas where vegetation is relatively open. Ute ladies'-tresses do not flower every year, though when they do, it is typically from late July through August. Ute ladies'-tresses is 8 to 20 inches tall, with white or ivory flowers clustered into a spike arrangement at the top of the stem. It may bloom in early July or still be in flower as late as October, depending on location and climatic conditions.

Threats include modification of riparian habitat, such as stream channelization and stabilization, or projects that effect downstream hydrology or hydrograph. At the time of listing, we identified habitat loss and modification as the primary threat to the species, but also noted that small population sizes and low reproductive rates rendered Ute ladies'-tresses vulnerable to other threats (USFWS 1992). Our listing rule identified several specific forms of habitat loss and modification as threats, including: urbanization, water development and conversion of lands to agriculture, excessive livestock grazing, excessive or inappropriate use of herbicides or other chemicals, and the proliferation of invasive exotic plant species. In addition, we concluded that the species may be subject to over-collection, given its status as an orchid and inquiries from orchid enthusiasts and wildflower collectors. Today, many of these same threats affect Ute ladies'-tresses at least at the site-specific level, and some newer stressors have emerged. For example, whereas over-collection had not materialized as a specific threat to Ute ladies'-tresses, vegetation succession, losses or

reductions in pollinators, and changes in hydrology appear to be new stressors. Current threats that remain include habitat loss and modification due to urbanization, water development and conversion of lands to agriculture, excessive livestock grazing, excessive or inappropriate use of herbicides or other chemicals, and the proliferation of invasive exotic plant species.

There are no known Ute ladies'-tresses orchids within the F.E. Warren, Hill AFB, and UTTR potions of the action area. One known occurrence intersects the area being considered for a proposed utility corridor by the Project, and potential habitat is present within the F.E. Warren AFB, its missile field, and Camp Guernsey. Two years (2020 and 2021) of survey efforts within these areas have found no Ute ladies'-tresses, and a third year of pre-construction surveys are planned.

Within the Hill AFB and UTTR portions of the action area, historical occurrences at the county level do not overlap with Project activities. Further, Ute ladies'-tresses are not expected to occur within these portions of the Project area because riparian and sub-irrigated meadow habitat that is suitable for Ute ladies'-tresses does not occur. The primary effect anticipated for this Project is habitat modification in the form of ground disturbing activities that result in trampling, crushing, or removal of vegetation; soil compaction and erosion that hamper growth; and introduction and spread of noxious weeds and invasive plants that outcompete Ute ladies'-tresses and degrade habitat. Further, drilling fluid may be released or spilled that could reduce plant growth or smother plants. Finally, dust, sediment, and other pollution may result from this Project can reduce productivity of Ute ladies'-tresses. There are no effects anticipated on Ute ladies'-tresses as a result of operations or MMIII decommissioning and disposal.

General conservation measures are described in the attached Opinion and include measures that would avoid and minimize impacts to Ute ladies'-tresses, such as selecting and siting corridors, workforce hubs, and laydown areas to avoid species and their habitat; segregating and storing the topsoil separately for reclamation and restoration; use directional drilling where feasible to avoid wetlands and riparian areas; use only approved herbicides; and avoid impacts on wetland and riparian areas unless physically or economically unfeasible. Additionally, the USAF BA contains the following requirements: "Avoid suitable habitat for Ute ladies'-tresses orchids along the proposed utility corridors. Where suitable habitat cannot be avoided, perform directional drilling at an adequate depth to ensure no damage to underground portions of the suitable habitat. In areas where directional drilling is not feasible, stake and flag the suitable habitat for avoidance and rerouting or micro siting."

Based on the limited amount of suitable habitat throughout the Project area and two years of negative surveys in accessible areas, it is unlikely that the Ute ladies'-tresses orchid occurs within the Project area. Therefore, we concur that implementation of the conservation measures described above would result in insignificant effects too small to be meaningfully measured, detected, or evaluated.

Whooping crane

The whooping crane is a tall (approximately 5-ft) white waterbird with black wingtips. The listing of the whooping crane preceded the ESA. It was first federally listed as threatened in 1967 (32 FR

4001, March 11, 1967). It was subsequently listed as endangered in 1970 (35 FR 8495, June 2, 1970), and "grandfathered" into the ESA once it became law in 1973 (CWS and USFWS 2007). Critical habitat was designated within the United States in 1978 (43 FR 36588, August 17, 1978), although no critical habitat occurs within the Project action area.

Whooping cranes migrate singly, in pairs, in family groups, or in small flocks and are sometimes accompanied by sandhill cranes (*Grus canadensis*). They use traditional migration staging areas located close to their breeding grounds where they gather before the first segment of their fall migration. Whooping cranes are diurnal migrants, stopping regularly to rest and feed at stopover areas along the migration route (Armbruster 1990; USFWS 2007). Whooping cranes travel through North Dakota during spring migration, from mid-April to early May, with peak migration in late April (Austin and Richert 2001). In North Dakota where Minot AFB is located, most fall sightings occur from late September to early November, with peak migration occurring in mid-October (Austin and Richert 2001). The species uses a variety of habitats where it feeds mostly on frogs, fish, plant tubers, insects, crayfish, and waste agriculture grains. Its migratory stopover habitat includes large, shallow wetlands for roosting; smaller wetlands for foraging; and cropland ponds for roosting and feeding (NDGF 2021; TWI 2013). Family groups and pairs are usually among the first to depart wintering grounds, normally between March 25 and April 15, with the last birds usually leaving by May 1 (CWS and USFWS 2007). The spring migration is usually completed in 2–4 weeks, more rapidly than the fall, as there is no known spring staging area.

Although it is very unlikely for migrating whooping crane to use Minot AFB as stopover habitat, the base is within their main migratory pathway and the disturbance resulting from the increased human activity and noise from construction may cause them to avoid flying directly over the base. Therefore, construction activities at Minot AFB would have short-term effects on migrating whooping cranes during spring or fall migration if the species is present at this location. If construction were to occur during migration and whooping cranes were to use habitat within one mile of construction area, cranes may be disturbed and leave the area. If this were to occur, it would most likely occur first thing in the morning, as whooping cranes overnight in one area before continuing the next morning. Disturbance, such as flushing the cranes, stresses them at critical times of the year, including migration. This can negatively impact migration and nesting behavior.

If construction is proposed in suitable habitat during spring (March 6–April 29) or fall migration (October 9–November 15), the USAF would conduct daily surveys for whooping cranes per the Service's current Whooping Crane Survey Protocol. If the species is observed within 0.5 mile of work activities, work would not be conducted until the whooping cranes leave the area and are no longer within 0.5 mile of work activities. Based on the above information, the Service concurs that potential adverse effects to the whooping crane are highly unlikely, and therefore, discountable.

Piping plover designated critical habitat

Service-designated critical habitat for the piping plover in North Dakota can be found on the Missouri River, Lake Darling, Lake Oahe, and Lake Sakakawea, as well as on many alkali lakes and wetlands. Critical habitat overlaps the action area at Minot AFB missile field within the proposed and existing utility corridors bordering and crossing Lake Darling, and a few miles and

multiple sections of proposed and existing utility corridor at various locations in Burke, McHenry, McLean, Mountrail, and Ward counties. The Minot portion of the action area contains approximately 12,000 acres of piping plover critical habitat.

This USAF is proposing to implement the following conservation measures to avoid or minimize impacts to piping plover designated critical habitat.

- Conduct preconstruction surveys in wetlands with potential or documented piping plover nesting habitat that is outside of designated critical habitat that cannot be avoided during the breeding season (April 1–September 1).
- Buffer piping plover designated critical habitat and wetlands with potential or documented piping plover nesting by one-half mile between April 1 and September 1. Restrict all construction and maintenance activities within this buffer during that period to minimize disturbance of nesting piping plovers.
- Develop appropriate conservation measures with the Service if construction activities must occur within one-half mile of designated critical habitat during the piping plover breeding season (April 1–September 1).
- Directionally drill beneath piping plover designed critical habitat where its primary constituent elements could be affected if the utility crossing was implemented using other methods (e.g., trenching).
- Design and construct Minot AFB Communication Tower #3, which is sited near the Lostwood NWR, as a freestanding tower without guy wires to avoid avian collision risk.

The one overriding PCE required to sustain a breeding population of piping plovers is the dynamic ecological processes that create and maintain piping plover habitat. These processes develop a mosaic of habitats on the landscape that provide the essential combination of prey, forage, nesting, brooding, and chick rearing areas, creating different physical PCEs on the landscape that exist in different habitat types. Critical habitat for piping plover includes four habitat types: prairie alkali lakes and wetlands, rivers, reservoirs, and inland lakes. For prairie alkali lakes and wetlands, the physical PCEs of critical habitat include shallow, seasonally-to- permanently flooded, mixosaline-to-hypersaline wetlands with sandy-to-gravelly, sparsely vegetated beaches, salt-encrusted mud flats, and/or gravelly salt flats; springs and fens along edges of alkali lakes and wetlands; and adjacent uplands 200 ft above the high-water mark. The physical PCEs for rivers include sparsely vegetated channel sandbars, sand and gravel beaches on islands, temporary pools on sandbars and islands, and the interface with the river. The physical PCEs for reservoirs include sparsely vegetated shoreline beaches, peninsulas, islands composed of sand, gravel, or shale and their interface with the waterbodies. The physical PCEs for inland lakes include sparsely vegetated and windswept sandy-to-gravelly islands, beaches, and peninsulas and their interface with the waterbody (67 FR 57643, September 11, 2002). The Service recommends a one-half-mile protective buffer around all piping plover critical habitat with potential or documented plover nesting between April 1 and September 1 to minimize any disturbance of nesting piping plovers from construction and maintenance activities.

Based on the information originally submitted in the BA, the USAF had determined that the Project was "*likely to adversely affect*" piping plover designated critical habitat because of

disturbance of the PCEs during the construction of utility corridors. Based on further analysis as well as input from the Service, the USAF now proposes to directionally drill beneath piping plover critical habitat where PCEs could be affected if the utility crossing was conducted using other methods (e.g., trenching). Employing this construction technique in piping plover critical habitat would avoid all adverse effects on the PCEs of the critical habitat.

No other project elements (i.e., beyond the currently proposed utility corridors) are currently proposed to cross piping plover critical habitat. The USAF acknowledges, however, that if any future proposed project components (e.g., access roads) would cross the critical habitat as the Project's design and engineering are finalized, additional consultation with the Service on the potential effects of those revisions (which are not captured in the current consultation effort) would be required. Based on this information, the Service concurs that alteration of piping plover critical habitat is highly unlikely, therefore, effects would be considered insignificant.

Non-listed Species Jeopardy Analysis

Monarch butterfly

The monarch butterfly is a large butterfly with bright orange and black patterning on its wings. In its 12-month finding, the Service announced that listing the monarch butterfly was warranted but precluded by higher priority actions (85 FR 81813, December 17, 2020). As a result, this species is a candidate for listing. Candidate species are defined as species for which the Service has sufficient information on biological status and threats to propose them as endangered or threatened under the ESA. Candidate species receive no statutory protection under the ESA, although the Service encourages cooperative conservation efforts for these species because they might warrant future protection (USFWS 2017; USFWS 2020a). The USAF determined that the proposed Project is not likely to jeopardize the continued existence of the monarch butterfly.

Of the three metapopulations of monarch butterflies, both the eastern and the western North American metapopulations could occur in the action area. Because of their expansive range and the ubiquitous nature of monarch habitat (i.e., milkweed stands and floral/nectar resources), the species has the potential to be present throughout all portions of the action area. In August 2020, two Tetra Tech biologists documented a monarch butterfly feeding on a milkweed plant within the F.E. Warren action area (Michael Ottenlips, Tetra Tech, personal communication, July 7, 2020). Monarch occurrences are intrinsically tied to milkweed distribution (CBD et al. 2014), and milkweed is known to occur within most portions of the action area (GBIF 2019). This species is considered potentially present within all portions of the action area. However, considering that the proposed action would affect a very small proportion of habitat used by the monarch, and proposed avoidance and minimization measures are likely to further reduce those effects, most of the remaining effects would be temporary. Therefore, we concur with USAF's determination that the proposed project is not likely to jeopardize the continued existence of the candidate monarch butterfly.

Whitebark pine

The USAF determined that the proposed Project is not likely to jeopardize the continued existence

of the federally proposed whitebark pine. This species is only expected to occur within the Malmstrom Area. The action area overlaps the range of whitebark pine at locations in the central and far western portions of the Malmstrom Area (USAF 2022). Surveys of the action area for whitebark pine are incomplete. Approximately 138 acres of the action area were surveyed for whitebark pine and none were found (USAF 2022) in those areas. Through desktop analysis (USAF 2022), the USAF identified approximately 1,453 acres of overlap between areas of proposed construction (proposed utility corridors, existing utility corridors that may be upgraded, and one communications tower) and the range of whitebark pine. By removing areas below 5,000 feet in elevation (the likely lower elevational limit of the species within the action area), USAF refined this overlap down to approximately 382 acres. We also note that the majority of utility line construction will likely be located within existing disturbed areas (USAF 2022) and that USAF may be able to reduce impacts by up to 75 percent in sensitive areas by reducing the width of temporary construction easements (USAF 2022). Furthermore, utility corridors would be revegetated following construction and could continue to function as whitebark pine habitat. More precise analysis (e.g., exact acreages of occupied habitat or number of individual trees to be affected) is not possible at this time because a majority of the action area has not been surveyed for whitebark pine. However, in a worst case, the Project could impact up to 1,453 acres of whitebark pine habitat and in the most likely case would impact substantially less than 382 acres.

Whitebark pines are found on approximately 56,000,000 acres within the western United States (USFWS 2018a). Considering that the proposed action would affect a very small proportion of habitat occupied by whitebark pine, proposed minimization measures are likely to further reduce those effects, most of the remaining effects would be temporary, and all surveys to date for the species within the action area have been negative; we concur with USAF's determination that the proposed project is not likely to jeopardize the continued existence of the federally proposed whitebark pine.

Tri-colored bat

In September 2022, the Service proposed to list the tricolored bat as an endangered species under ESA. The Service determined designating critical habitat for this species was not practical (87 FR 56381, September 14, 2022). The USAF determined that the proposed Project is not likely to jeopardize the continued existence of the federally proposed tricolored bat. This species is only expected to occur within the F.E. Warren portion of the action area.

Tricolored bats occupy forested habitats in spring, summer, and fall, during their active season, primarily roosting among leaves of live or recently dead deciduous hardwood trees, pine needles, and eastern red cedar (*Juniperus virginiana*), as well as in man-made structures such as barns, bridges, and concrete bunkers, and under porch roofs. In the southern portion of the species' range, where caves are limited, it is known to roost in Spanish moss (*Tillandsia usneoides*) and lichen (*Usnea trichodea*) (USFWS 2022). Suitable summer habitat necessary for successful reproduction includes a network of clustered maternity roost sites near foraging habitat located close to abundant food and water resources. Maternity roost sites have been recorded in trees and buildings, averaging 4–15 females and their pups (USFWS 2021a). The proximity of roosts to foraging habitat near abundant prey resources is an important habitat requirement during the spring, summer, and fall months.

During the winter, tricolored bats occupy caves and abandoned mines to hibernate; although they also are known to use road culverts, tree cavities, and abandoned water wells in the southern United States, where they exhibit shorter torpor periods instead of going into full hibernation (USFWS 2021a, 2022). When hibernating, the species usually roosts singly and sometimes in pairs or small clusters away from other bat species (BCI 2018; USFWS 2021a). Suitable winter habitat must have stable microclimates within narrow temperature ranges and low levels of disturbance (USFWS 2021a). The tricolored bat is one of the first species to enter hibernation in the fall (September or October) and one of the last to emerge in the spring (mid-March to mid-May). Short regional migration distances of from 27 to 151 miles have been recorded for tricolored bats dispersing from winter hibernacula sites to summer roosting habitat in the spring. Tricolored bats often will return to the same exact hibernacula location year after year (BCI 2018; TPWD 2022).

Tricolored bats emerge from their day roosts in the early evening to forage for small flying insects (e.g., caddisflies, moths, beetles, wasps, flying ants, and flies) at treetop level or above. Foraging commonly occurs with eastern red bats (*Lasiurus borealis*) and silver-haired bats (*Lasionycteris noctivagans*) over waterways and forest edges. Tricolored bats may travel from 3 to 15 miles from their roosting site to their feeding area (USFWS 2021a).

The USAF has considered the tricolored bat for the F.E. Warren portion of the action area, which includes the base, its missile field, and Camp Guernsey. The species is not known to be present within the Malmstrom, Minot, Hill AFB, or UTTR portions of the action area. Tricolored bat range overlaps all counties associated with the F.E. Warren portion of the action area (USFWS 2022). While little is known about the species, it is known to occur at Camp Guernsey based on multiple surveys conducted by Wyoming Army National Guard staff (WYARNG 2020) and has been documented in Colorado (Adams et al. 2018).

At Camp Guernsey, a genetic analysis of guano in 2017 indicated the species was using Youngite Mine Cave, located in the cliffs along the North Platte River in the installation's North Training Area (NTA). Additionally, acoustic monitoring has identified the species not far from the cave and the Wyoming Game and Fish Department (WYGFD) has identified the species at a site within a few miles away the cave. Youngite Mine Cave has been identified as a community bat roost that houses multiple species (WYARNG 2020). The WYGFD gated the cave in 2018 to protect roosting bats from rock collectors searching for fluorescent youngite crystals, which occur only in this cave (WYARNG 2020). No occurrences of the species have been recorded outside of Camp Guernsey in either Nebraska or Wyoming (NENHP 2021; WYNDD 2020; 2021); however, no systematic surveys have been conducted and the species is expected to occur throughout its range, including the portions of the action area at F.E. Warren. The range of tricolored bat overlaps the F.E. Warren portion of the action area (USFWS 2022). Surveys have confirmed the presence of tricolored bats within and near Youngite Mine Cave in the NTA at Camp Guernsey (WYARNG 2020). The location of the Youngite Mine Cave is not publicly identified, but the NTA is a minimum of 5 miles from proposed on-base elements.

The F.E. Warren portion of the action area is within the Northern geographic representation unit (RPU), which is mostly defined by hot summers, cool or cold winters, deciduous forests to the east, prairies to the west, and coniferous forests to the north. The cooler winters in the Northern

RPU cause tricolored bats to exhibit longer hibernation periods, with hibernation emergence occurring between April and May (USFWS 2021a).

The primary threats to tricolored bat are WNS, foraging and commuting habitat, and climate change variables that alter temperature and precipitation levels (USFWS 2021a). The USAF determined that the four stressors identified in the BA—habitat modification, noise, human disturbance, and lighting—would affect the tricolored bat and has analyzed them for the species.

Tree-dominated vegetation types represent potential roosting habitat at F.E. Warren AFB and Camp Guernsey, and account for about one acre of area considered for construction (USGS 2016). Construction-related activities that include habitat modification; noise; and human disturbance, presence, and activity as well as artificial lighting would occur during the species' active season (April–October). Activities conducted outside that season (during hibernation November–March) would not affect the species. Proposed on-base construction would not be conducted in forested habitat and would not include tree removal. Although construction would occur during the species' active season, it would occur only in marginal habitat and no roosts or hibernacula are known to occur within the F.E. Warren AFB or Camp Guernsey portion of the action area. Temporary artificial lighting would be installed during construction in areas with some existing nighttime lighting. The use of artificial light can displace foraging and commuting bats as well as hinder their emergence from roost sites (Stone et al. 2015).

Operations and maintenance activities at F.E. Warren AFB would result in an increase in human activity while the MMIII and GBSD programs are operating simultaneously. The new facilities, with the exception of the proposed utility corridor, would be located in areas of existing disturbance and marginal habitat. Once the GBSD weapon system is fully deployed and MMIII decommissioning is complete, the level of human activity at F.E. Warren AFB would decrease to less than preconstruction conditions. Operations and maintenance activities would not be conducted in the Camp Guernsey portion of the action area; therefore, there are no anticipated effects on the tricolored bat.

The range for the species overlaps all seven counties associated with the F.E. Warren AFB missile field portion of the action area and the species is expected to occur. Less than 1 percent of the entire F.E. Warren portion of the action area contains tricolored bat roosting habitat (i.e., forest, open water, and riparian habitats) (Figures H-1 and H-2) (USGS 2016).

The MAF and LF sites throughout the F.E. Warren AFB missile field are in areas that have been previously altered and modified. Construction activities at these locations would not occur in forested habitat used by the species, and sensitive bat habitats (wetlands and riparian areas) would be avoided during the siting of the 1-acre easements to minimize the disturbance of roosting and foraging bats. To avoid disturbance to tricolored bats (and other bat species) roosting in artificial structures such as buildings, the USAF would conduct visual bat surveys prior to demolition. No forested habitat exists within 330 ft of a MAF or LF site; therefore, it is unlikely roosting bats would be nearby and could be disturbed by construction noise. In addition, these sites occur in already-developed areas and the bats are likely habituated to this disturbance or already avoid the areas. Construction of the communication towers would not impact any forested habitat and no forested habitat is within 330 ft of proposed tower sites that would be impacted by noise

disturbance; therefore, the construction of communication towers is not expected to have an effect on tricolored bats.

The area considered for construction overlaps approximately 6 acres of forest habitat for proposed utility corridor and approximately 17 acres of forest habitat for the existing utility corridors. Additionally, there are approximately 68 acres of forest habitat within 330 ft of the area considered for construction for proposed utility corridor and 189 acres for the existing utility corridor and might be affected by noise. Upon completion of utility corridor installation, disturbed areas would be topographically restored and reseeded. In areas from which forested habitat is removed, construction activities would have long-term effects on tricolored bat as restoration of the modified habitat would take many years. The effects of noise resulting from construction activities associated with proposed and existing utility corridors would be limited (less than 330 ft at 62 dB) (Schaub et al. 2008, Luo et al. 2014).

Although use of artificial structures (e.g., barns and old homesteads) may be infrequent within the action area, they might harbor roosting bats. The noise from construction would be limited and bats using artificial structures near roadways are most likely more tolerant of noise. The increase in human activity associated with construction activities during daylight hours occurs within already-developed areas and, therefore, would have discountable effects on the tricolored bat.

Artificial light can displace foraging and commuting bats as well as hinder their emergence from roost sites. Because temporary artificial light installation during construction would occur in previously developed locations, including some areas that already have nighttime lighting, the effects on bats from artificial lighting would be short term and minimal.

Operations and maintenance activities associated with MAFs and LFs would have long-term discountable effects on tricolored bats as the facilities are in previously developed locations and human disturbance, presence, and activity are not anticipated to exceed current levels. The activities associated with communication towers also would have long-term discountable effects on tricolored bats as human disturbance, presence, and activity and artificial lighting would exceed current levels, but at a discountable level. Bats rarely collide with stationary structures, such as the proposed communication towers, as they pose little collision risk to echolocating bats like the tricolored bat (Van Gelder 1956).

MMIII decommissioning and disposal activities at F.E. Warren AFB would have short-term discountable effects on tricolored bats as these activities would occur only within previously disturbed or developed areas; no modification of habitat would occur; and additional truck traffic on public roads as well as helicopter surveillance during missile transport would be negligible compared to existing conditions. The increase in anthropogenic disturbance at F.E. Warren AFB from noise; nighttime lighting; and human disturbance, presence, and activity associated with the decommissioning and disposal of the MMIII weapon system is not anticipated to affect tricolored bats as described for on-base construction and operations.

The tricolor bat may use the F.E. Warren portion of the action area during the active season (April–October), but no hibernacula or winter use has been documented. Habitat modification from construction activities in the F.E. Warren action area could directly impact 23 acres of

forested habitat. Noise and artificial lighting from construction activities might disturb roosting and foraging bats, but these activities would primarily occur in areas with some level of existing development that currently contain elevated noise and artificial light levels. Workforce hubs and laydown areas would not be sited in locations that support tricolored bats; therefore, the construction of these project elements would have no effect on the species. Furthermore, implementation of conservation measures would avoid or minimize effects on the species. Based on the reasons presented above, the project would not jeopardize the continued existence of the tricolored bat.

Wolverine

The USAF determined that the proposed Project is not likely to jeopardize the continued existence of the federally proposed wolverine. This species is only expected to occur within the Malmstrom portion of the action area.

Wolverines select areas that are cold and receive enough winter precipitation to reliably maintain deep persistent snow late into the warm season. Year-round habitat for wolverines within the contiguous U.S. is generally centered around the tree line in conifer forests and rocky alpine habitat. Deep persistent spring snow is necessary for year-round occupancy and natal dens are always excavated in deep snow. Wolverines have large home ranges (e.g., within Glacier National Park male home ranges averaged 193 square miles and females 55 square miles) (78 FR 7864).

The western and southwestern parts of the missile field in the Malmstrom area overlap with areas where wolverines may be present (USAF 2022). The area being considered for construction of both the proposed and existing utility corridors, as well as the MAFs, LFs, and communication towers includes about 24,000 acres where wolverines may be present. Based on the National Land Cover Database, these acres are primarily represented by native grassland (29 percent), agriculture (28 percent), and developed areas (17 percent), while a small proportion is classified as forest (3 percent). A majority of project elements would occur within previously developed areas (MAFs, LFs, and proposed utility corridor). The existing utility corridor and communication towers would occur in areas with minimal previous disturbance and represent approximately 13,000 acres within the area where wolverines may be present. The off-base elements located in areas with minimal previous disturbance also mostly consist of agriculture (36 percent) and native grassland (35 percent), with less than one percent of forest (USAF 2022).

Although there is substantial overlap between the Malmstrom area and areas where wolverines may be present, most habitat types would be unsuitable for the wolverine or suitable only for transitory use by individuals moving across the landscape. Furthermore, most of the areas to be affected by construction have been previously developed/disturbed. We expect that the proposed action would have little effect to areas of year-round habitat for wolverines. Also, because wolverines are a wide-ranging species and would be free to leave construction areas while work is ongoing, we believe that disturbance effects within the mostly linear project areas would be minimal. We therefore concur with USAF's determination that the proposed project is not likely to jeopardize the continued existence of the federally proposed wolverine.

Summary

In accordance with 50 CFR §402.13, the Service concurs with the USAF's determination that the proposed action may affect, but is not likely to adversely affect the threatened Canada lynx, grizzly bear, Preble's meadow jumping mouse, red knot, bull trout, Ute ladies'-tresses, or the endangered northern long-eared bat or whooping crane. In addition, we concur that the USAF's proposed action may affect, but is not likely to adversely affect designated critical habitat for the Canada lynx, bull trout, or piping plover. The Service also concurs that the proposed project would not jeopardize the continued existence of the candidate monarch butterfly, or the proposed threatened whitebark pine, tri-colored bat, or wolverine.

On July 5, 2022, the U.S. District Court of the Northern District Court of California vacated the 2019 regulations implementing section 7 of the ESA. On September 21, 2022, the Ninth Circuit Court of Appeals granted a request to stay the U.S. District Court of Northern California's July 5, 2022, order that vacated the 2019 ESA regulations. On November 14, 2022, the U.S. District Court of Northern California issued a final ruling remanding the 2019 regulation revisions back to the Service for further action, but, determined vacatur of the 2019 regulations was not appropriate. As a result, the 2019 regulations are again in effect, and the Service has relied upon the 2019 regulations in issuing our written concurrence on the action agency's "may affect, not-likely-to-adversely-affect" determination. However, we considered whether our substantive analyses and conclusions would have been different if the pre-2019 regulations were applied in this informal consultation. Our analysis included the prior definition of "effects of the action." We considered all the "direct and indirect effects" and the "interrelated and interdependent activities" when determining the "effects of the action." We then considered whether any "effects of the action" that overlap with applicable ranges of listed species or designated critical habitat would be wholly beneficial, insignificant, or discountable to the species or critical habitat. As a result, we determined the substantive analysis and conclusions would have been the same, irrespective of which regulations applied.

Reinitiation of consultation is required and shall be requested by the Federal agency or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and:

1. If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;
2. If the identified action is subsequently modified in a manner that causes an effect to the listed species that was not considered in the written concurrence; or,
3. If a new species is listed or critical habitat designated that may be affected by the identified action.

If any of these reinitiation requirements is triggered, we recommend you contact our office so that we may assist you in re-assessing project impacts.

We appreciate your efforts to conserve endangered species. If you have questions regarding this letter, please contact Darren LeBlanc, Regional Section 7 Coordinator, Mountain Prairie Regional Office (phone: 303-646-4016 or email: darren_leblanc@fws.gov). When referring to this project, please include the following ECOSphere reference number: 2022-0054024.

Literature Cited

Adams, R.A., B. Stoner, D. Nespoli, and S.M. Bexell. 2018. New records of tricolored bats (*Perimyotis subflavus*) in Colorado, with first evidence of reproduction. *Western North American Naturalist* 78(2):212–215.

AFCEC (Air Force Civil Engineering Center). 2019.

AFGSC (Air Force Global Strike Command). 2020a. *Dakota Skipper Habitat Level Reconnaissance Report in the Proposed Utility Corridors for the Minot Air Force Base Missile Field.* Barksdale Air Force Base, LA.

Armbruster, M.J. 1990. Characterization of habitat used by whooping cranes during migration. U.S. Fish Wildlife Service, Biological Report 90(4).

Austin, J.E., and A.L. Richert. 2001. *A Comprehensive Review of the Observational and Site Evaluation Data of Migrant Whooping Cranes in the United States, 1943-99.* U.S. Geological Survey, Northern Prairie Wildlife Research Center, Jamestown, ND; and State Museum, University of Nebraska, Lincoln, NE.

BCI (Bat Conservation International). 2018. Species Spotlight: Tri-colored bat. *Bats* 37(2):6–7.

Canadian Wildlife Service (CWS) and USFWS. 2007. *International Recovery Plan for the Whooping Crane*. Ottawa: Recovery of Nationally Endangered Wildlife (RENEW), and U.S. Fish and Wildlife Service, Albuquerque, NM.

Center for Biological Diversity (CBD), Center for Food Safety, Xerces Society, and L. P. Brower. 2014. Petition to protect the monarch butterfly (*Danaus plexippus plexippus*) under the Endangered Species Act.

Environment and Climate Change Canada (ECCC). 2017. *Recovery Strategy and Management Plan for the Red Knot (Calidris canutus) in Canada.* Species at Risk Act Recovery Strategy series. Environment and climate change. Ottawa, Canada.

EPA. 2016. Level III and Level IV Ecoregions of the Continental United States.

Global Biodiversity Information Facility (GBIF). 2019. Asclepias L. GBIF Backbone Taxonomy.

Gleich, O., and J. Strutz. 2012. *The Mongolian Gerbil as a Model for the Analysis of Peripheral and Central Age-Dependent Hearing Loss*. University of Regensburg, Germany.

Kunz, T.H., and M.B. Fenton, ed. 2003. *Bat Ecology.* The University of Chicago Press, Chicago, IL.

Luo, J., B.M. Clarin, I.M. Borissov, and B.M. Siemers. 2014. Are torpid bats immune to anthropogenic noise? Journal of Experimental Biology 217:1072–1078.

Mollenauer, S., R. Bryson, M. Robison, and C. Phillips. 1992. Noise avoidance in the C57BL/6J mouse. *Animal Learning and Behavior* 20(1):25–32.

Montana Fish, Wildlife & Parks (MTFWP) and Montana Natural Heritage Program (MTNHP). 2021. *Montana Field Guide.*

North Dakota Game and Fish (NDGF). 2021. Species Identification.

Nebraska Natural Heritage Program (NENHP). 2020. Species Occurrences.

Niles, L.J., H.P. Sitters, A.D. Dey, P.W. Atkinson, A.J. Baker, K.A. Bennett, R. Carmona, K.E. Clark, N.A. Clark, and C. Espoza. 2008. Status of the red knot (*Calidris canutus rufa*) in the Western Hemisphere. *Studies in Avian Biology* 36:1–185.

North Continental Divide Ecosystem (NCDE) Subcommittee. 2020. Conservation strategy for the grizzly bear in the Northern Continental Divide Ecosystem.

Reynolds, R., W. Kinard, J. Degraff, N. Leverage, and J. Norton. 2010. *Noise in a laboratory animal facility from the human and mouse perspectives*. *Journal of the American Association for Laboratory Animal Science* 49(5):592–597.

Schaub, A., J. Ostwald, and B.M. Siemers. 2008. Foraging bats avoid noise. *The Journal of Experimental Biology* 211:3174–3180.

Stone, E.L., S. Harris, and G. Jones. 2015. Impacts of artificial lighting on bats: A review of challenges and solutions. *Mammalian Biology* 80:213–219.

Texas Wildlife and Parks Department (TWPD). 2022. Tricolored Bat (*Perimyotis subflavus*).

The Watershed Institute (TWI). 2013. Potentially Suitable Habitat Assessment for the Whooping Crane (*Grus americana*). Prepared by Watershed Institute Inc. Topeka, KS.

USAF. 2020. *Integrated Natural Resources Management Plan.* F.E. Warren Air Force Base, WY.

USAF. 2022. Biological Assessment for the Ground Based Strategic Deterrent deployment and Minuteman III decommissioning and disposal. Plus amendments.

USFWS. 1992. Interim Survey Requirements for Ute Ladies'-Tresses Orchid (*Spiranthes diluvialis*).

USFWS. 2004. Preble's Meadow Jumping Mouse (*Zapus hudsonius prebleiI*). Survey Guidelines.

USFWS. 2007. International Recovery Plan Whooping Crane (Grus americana). Third Edition.

USFWS. 2014. Northern Long-Eared Bat Interim Conference and Planning Guidance.

USFWS. 2015a. Columbia Headwaters Recovery Unit Implementation Plan for Bull Trout (*Salvelinus confluentus*). Kalispell Suboffice, Northern Idaho Field Office, and Eastern Washington Field Office.

USFWS. 2015b. Northern Long-Eared Bat (*Myotis septentrionalis)*.

USFWS. 2015c. Recovery Plan for the Coterminous United States Population of Bull Trout (*Salvelinus confluentus*). Portland, Oregon.

USFWS. 2016. Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat.

USFWS. 2017. Candidate Species. Section 4 of the Endangered Species Act. Ecological Services Program. Falls Church, VA

USFWS. 2018a. Species status assessment for the whitebark pine, *Pinus albicaulis.*

USFWS. 2018b. Recovery Plan – Preble's Meadow Jumping Mouse (*Zapus hudsonius prebleiI*). USFWS Mountain-Prairie Region.

USFWS. 2020e. Monarch Butterfly. Biological Opinion and Conference Opinion in the U.S. Fish and Wildlife Service's approval of a Candidate Conservation Agreement with Assurances and Candidate Conservation Agreement and its issuance of an associated Endangered Species Act Section 10(a)(1)(A) Permit.

USFWS. 2020i. Preble's Meadow Jumping Mouse. Recommended Conservation Measures.

USFWS. 2020c. Range-Wide Indiana Bat Summer Survey Guidelines.

USFWS. 2020k. Species status assessment report for the *rufa* red knot (*Calidris canutus rufa*). Version 1.1. Ecological Services New Jersey Field Office, Galloway, NJ.

USFWS. 2021a. Species Status Assessment Report for the Tri-colored Bat (*Perimyotis subflavus*), Version 1.1. Hadley, MA.

USFWS. 2021d. Environmental Conservation Online System (ECOS) Threatened and Endangered Species.

USFWS. 2022. Threatened and Endangered Species and Range Data. Environmental Conservation Online System (ECOS).

USGS (U.S. Geological Survey). 2016. LANDFIRE Existing Vegetation Type layer.

Van Gelder, R.G. 1956. Echo-location failure in migratory bats. *Transactions of the Kansas Academy of Science* 59:220–222.

Wrigley, M.J., M. White, B. Elliott, M. Comer, R.E. Torretta, P. Gaines, S. Olson, K. Meyer, M. Painter, J. Windorski, F. Quesada, and M. Welker. 2012. *Threatened, endangered, and Forest Service sensitive species on the Pike and San Isabel National Forests (updated June 2012).* Unpublished Report. U.S. Department of Agriculture, Forest Service. Pike and San Isabel National Forests and Comanche and Cimarron National Grasslands. Salida, CO.

Wyoming Army National Guard (WYARNG). 2020. *Integrated Natural Resources Management Plan for Camp Guernsey 2017 (Update 2020)*.

Wyoming Natural Diversity Database (WYNDD). 2020. Species Occurrences for Laramie and Goshen counties.

WYNDD. 2021. Species Occurrences for Platte County.

Appendix B. Maps and Figures

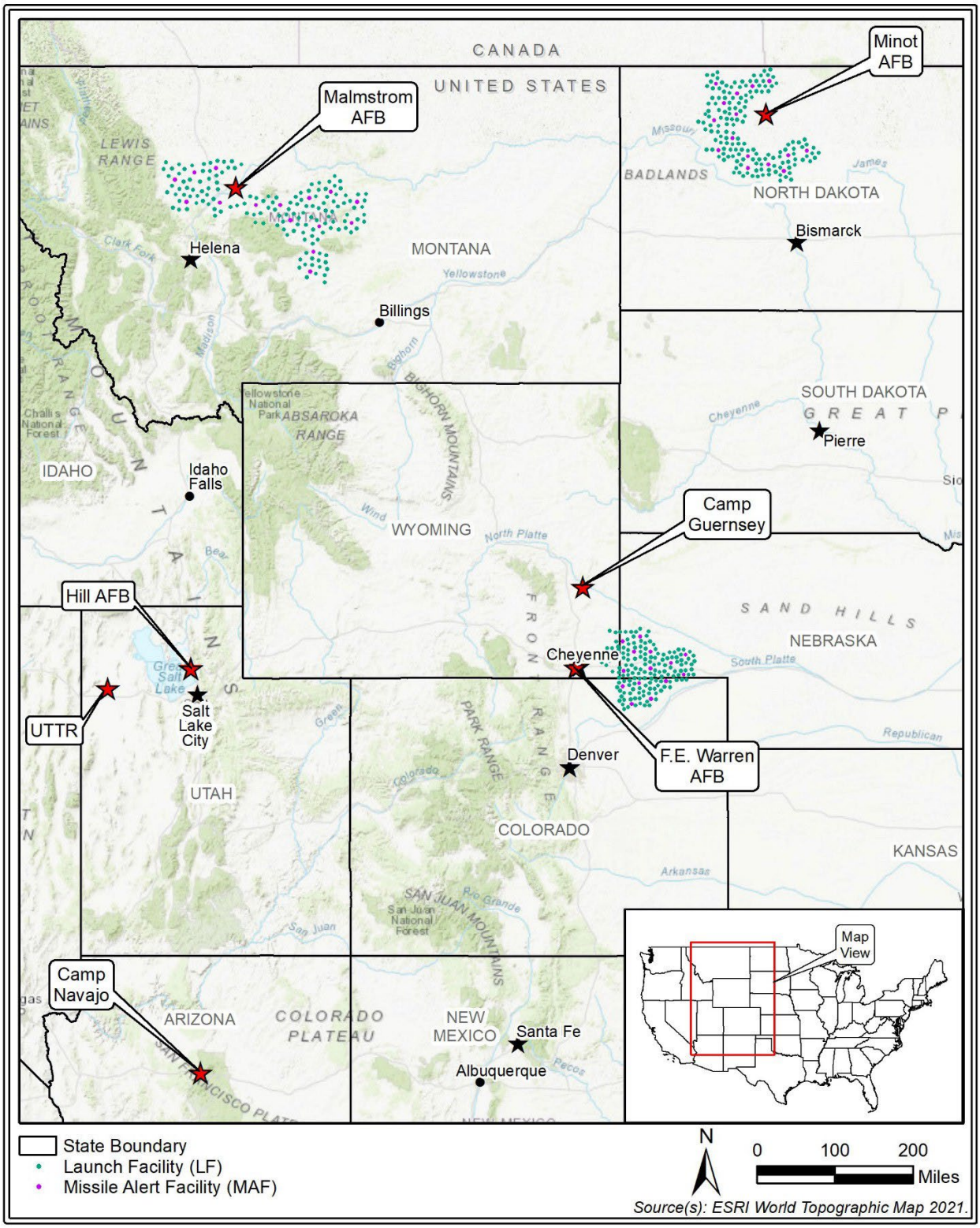


Figure 1. GBSD Deployment and Support Locations

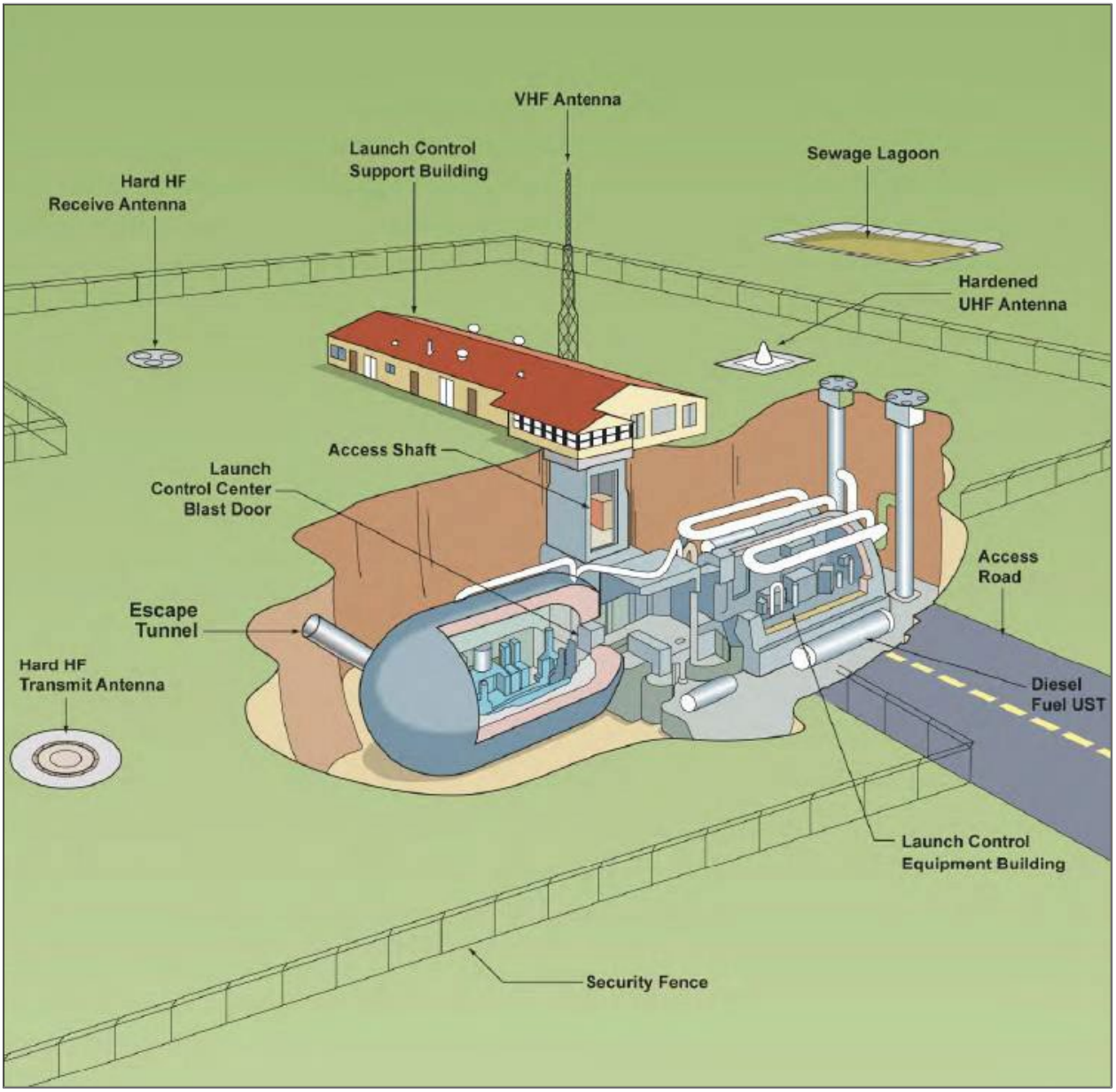


Figure 2. Typical MMIII Missile Alert Facility

Figure 3. Aerial View of a Typical MMIII Missile Alert Facility

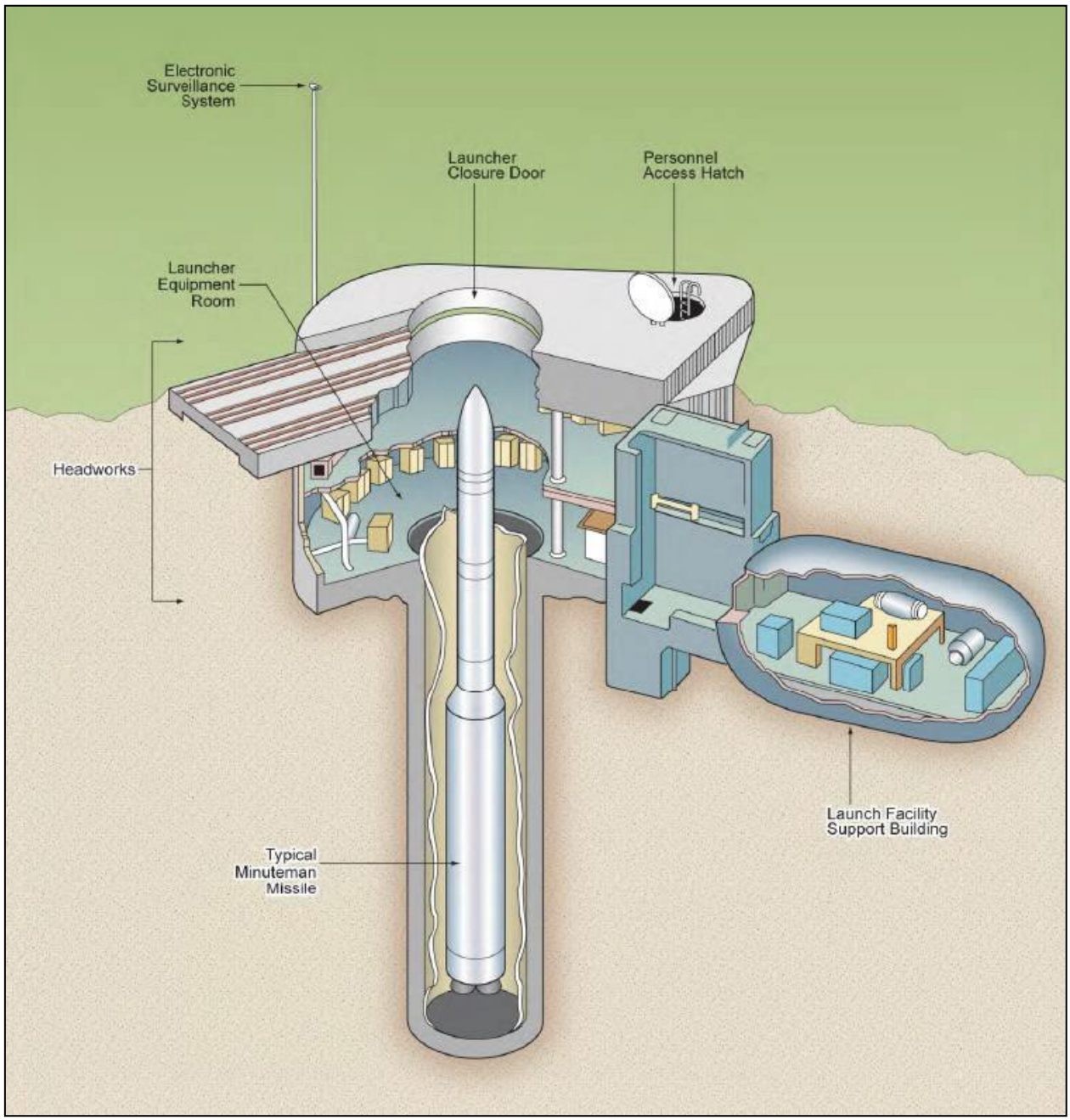


Figure 4. Typical Launch Facility

Figure 5. Aerial View of a Typical Launch Facility

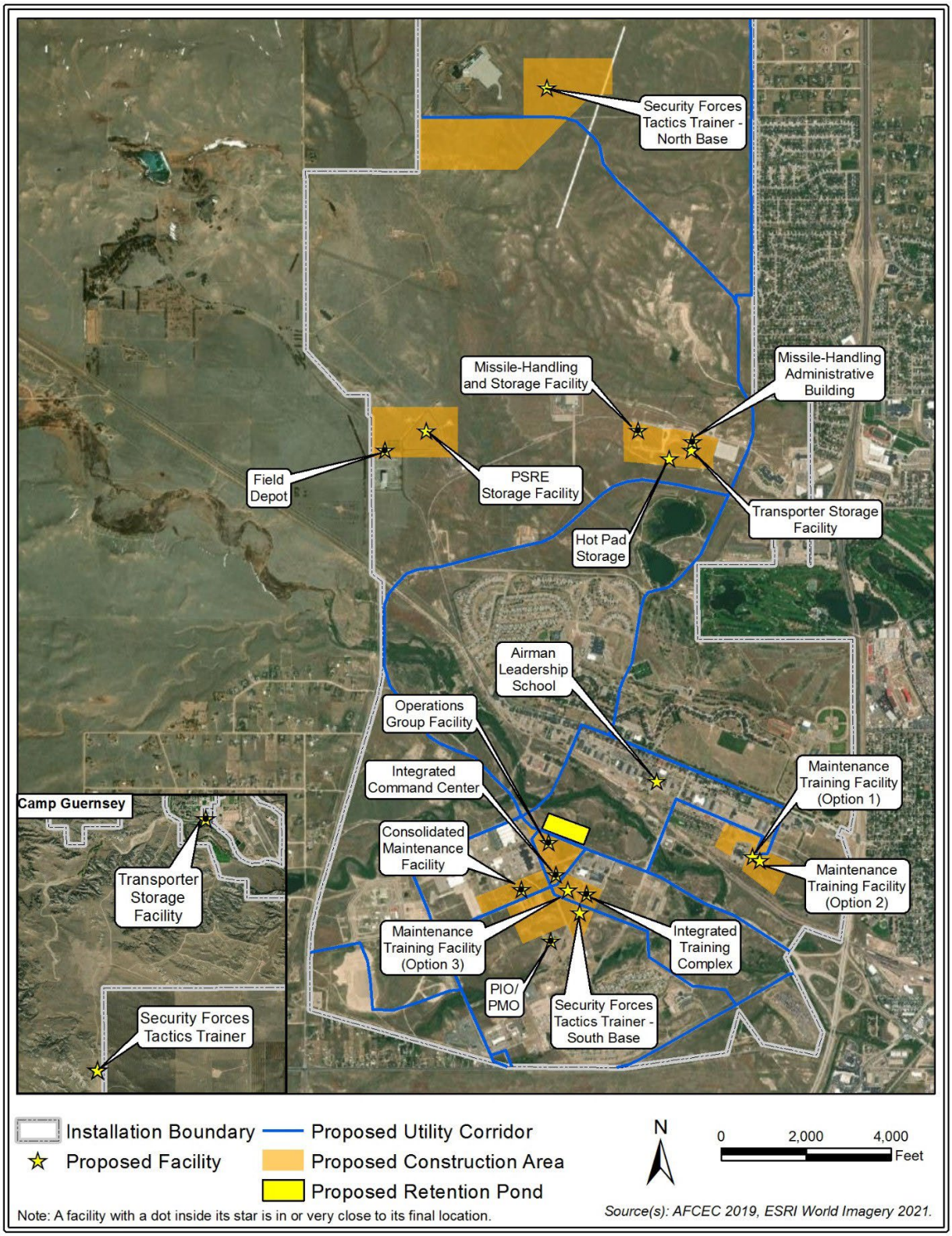


Figure 6. On-Base Construction at F.E. Warren AFB and Camp Guernsey

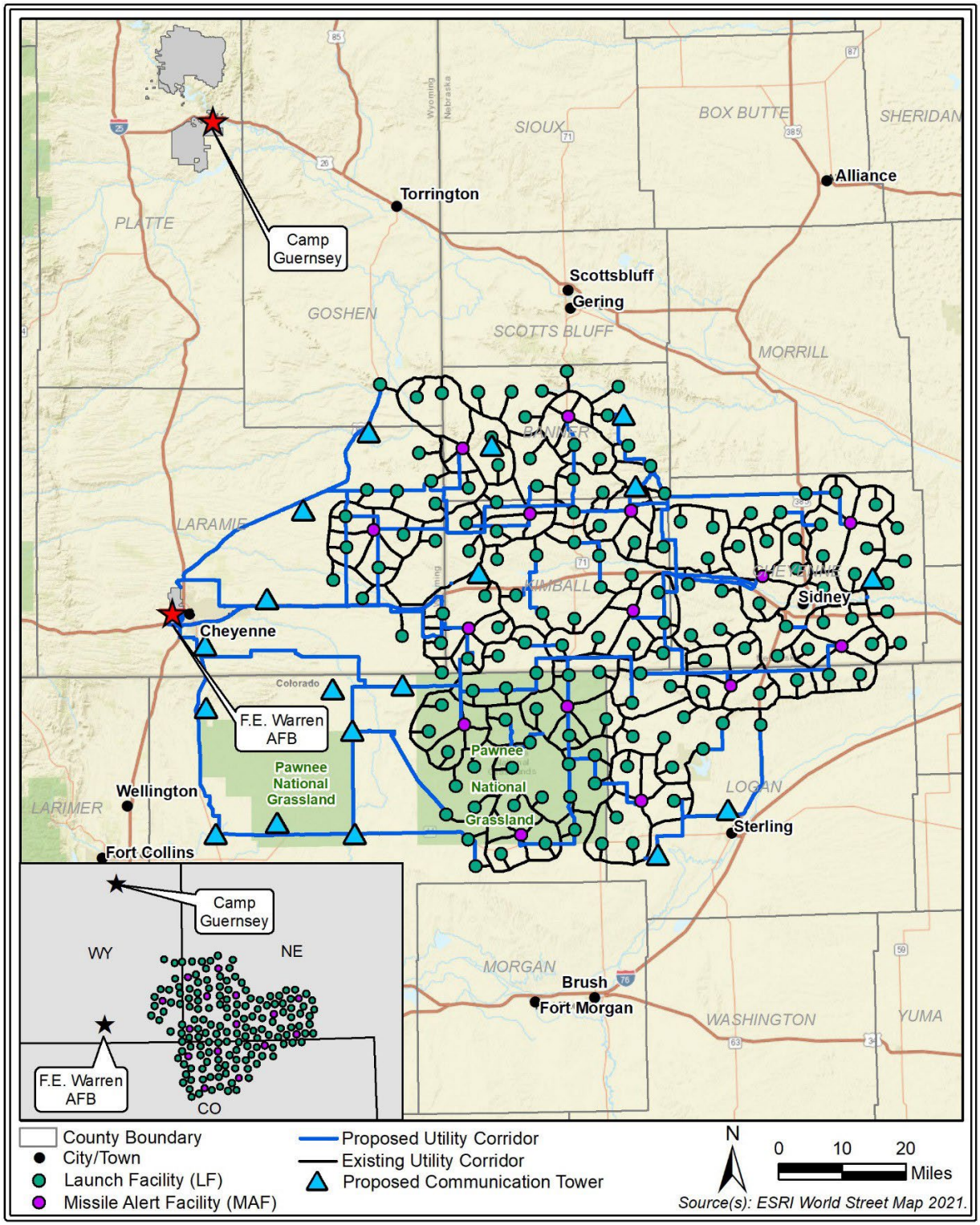


Figure 7. Off-Base Elements of the GBSD Deployment for F.E. Warren AFB

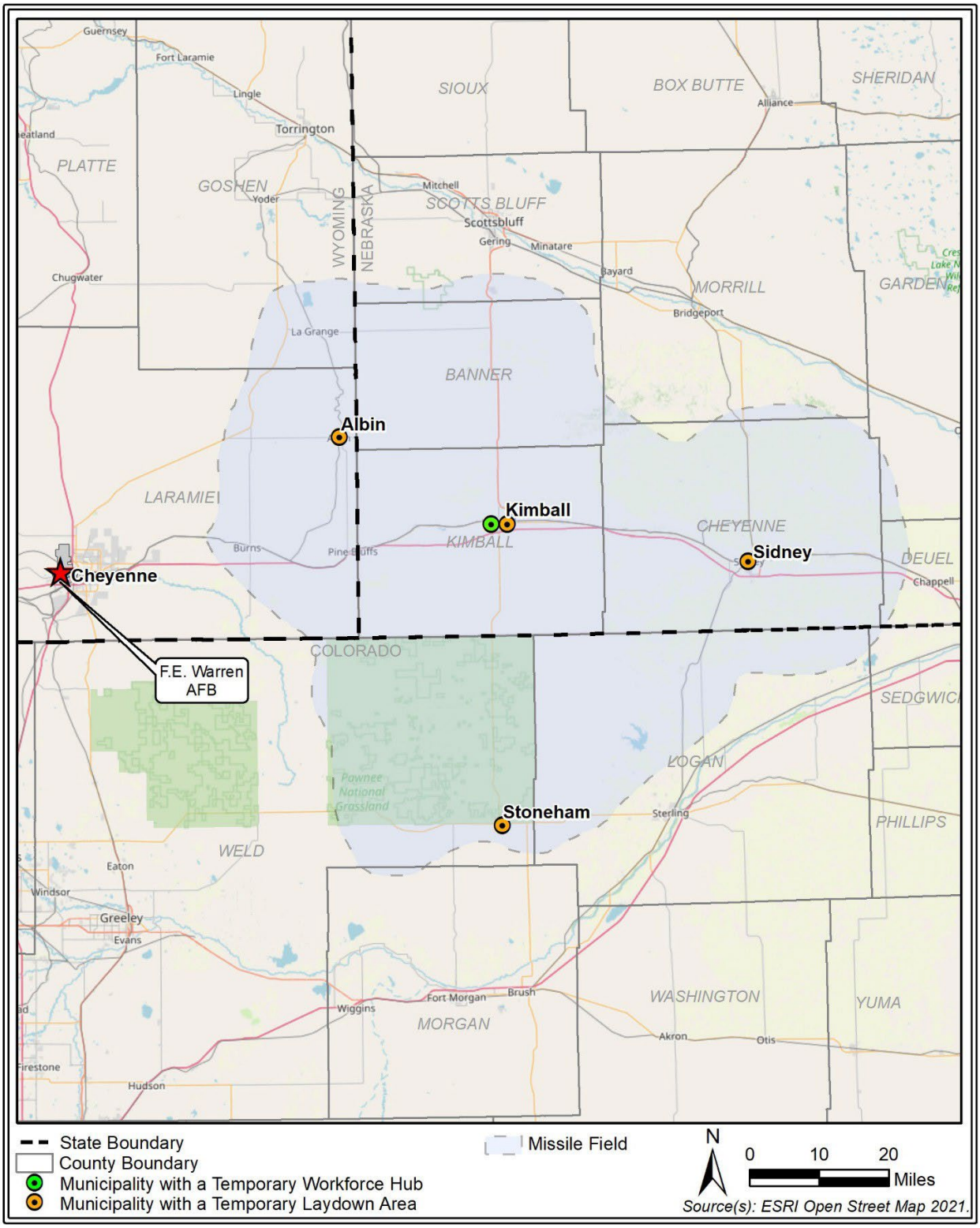


Figure 8. Workforce Hub and Laydown Areas for F.E. Warren AFB

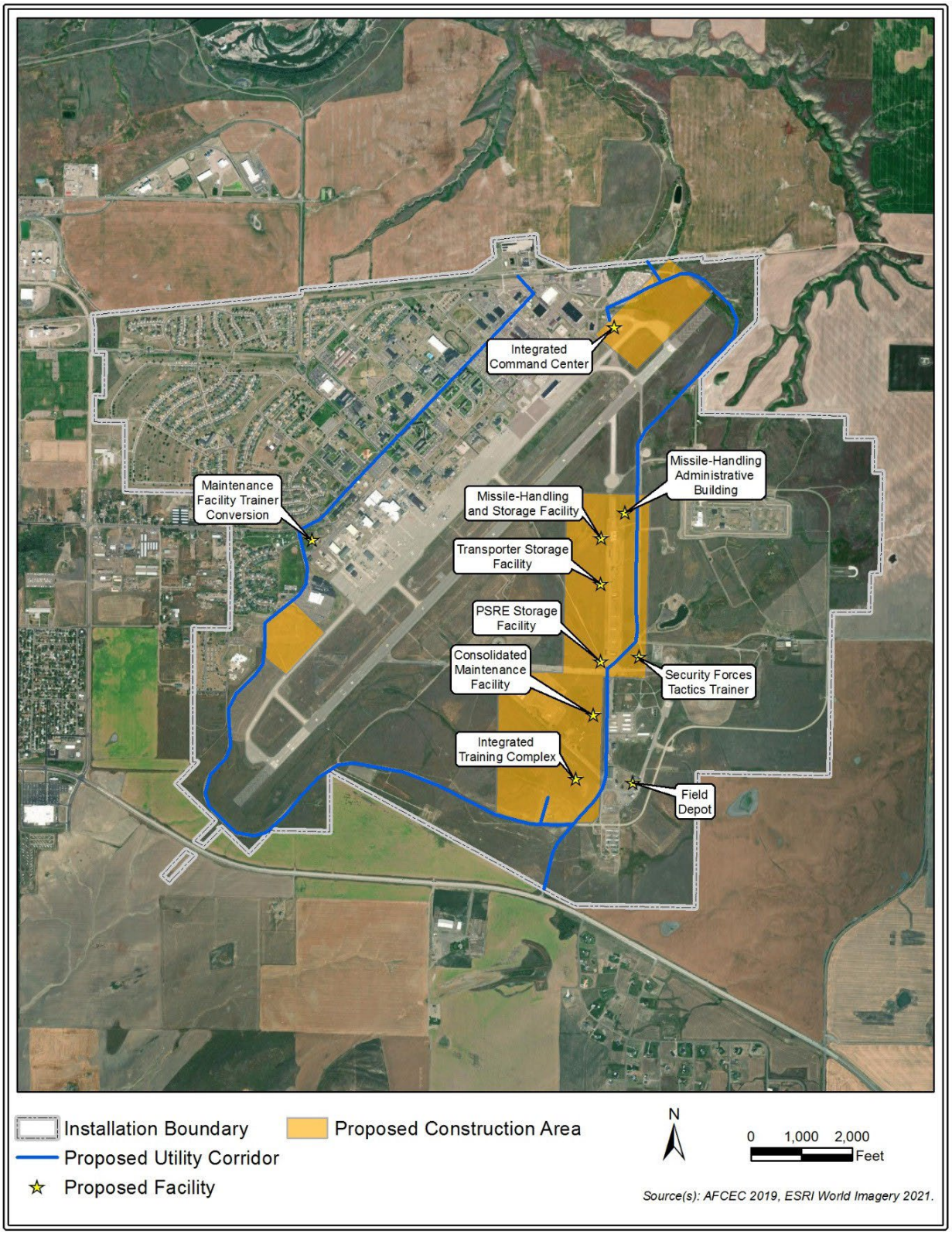


Figure 9. On-Base Construction at Malmstrom AFB

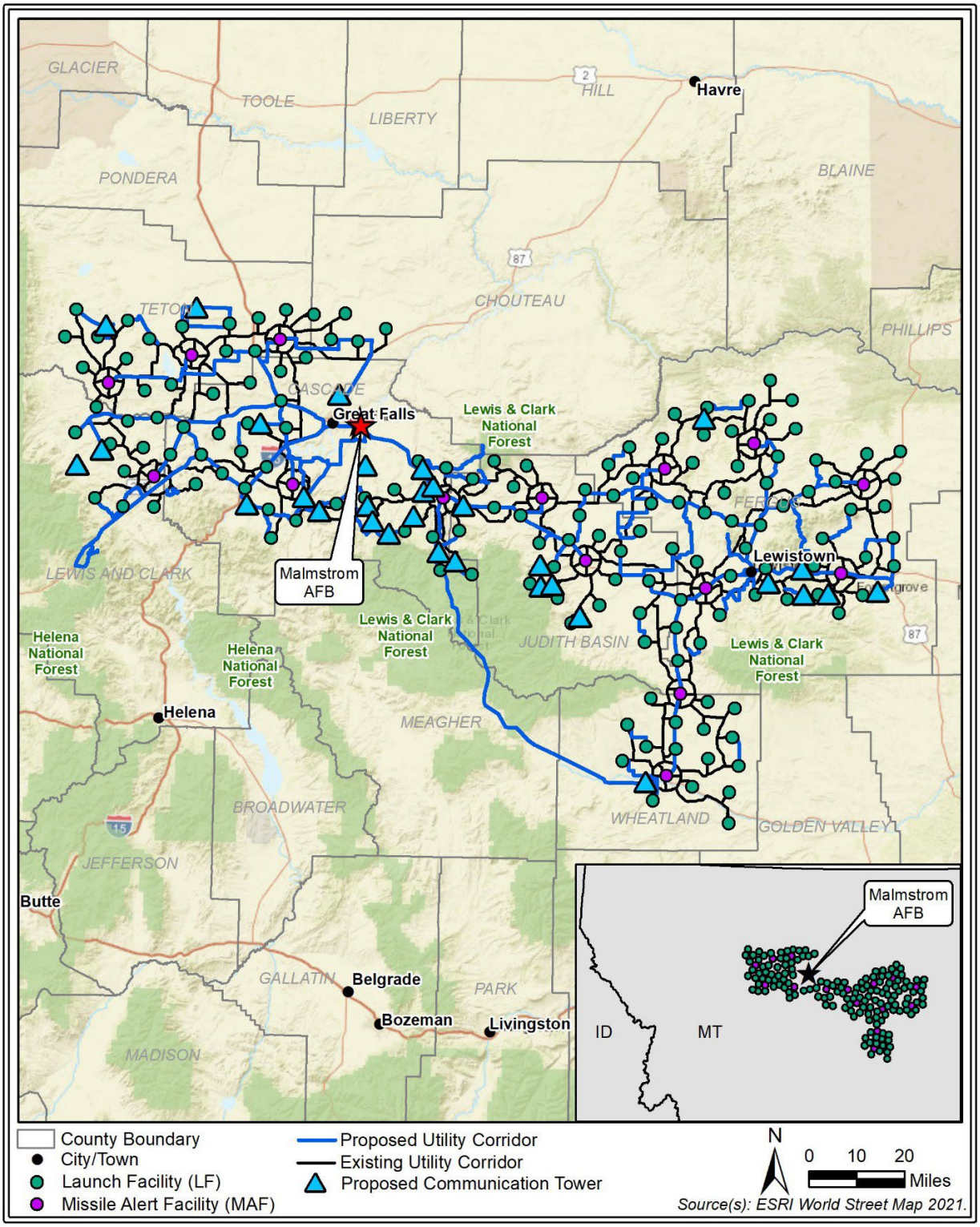


Figure 10. Off-Base Elements of the GBSD Deployment for Malmstrom AFB

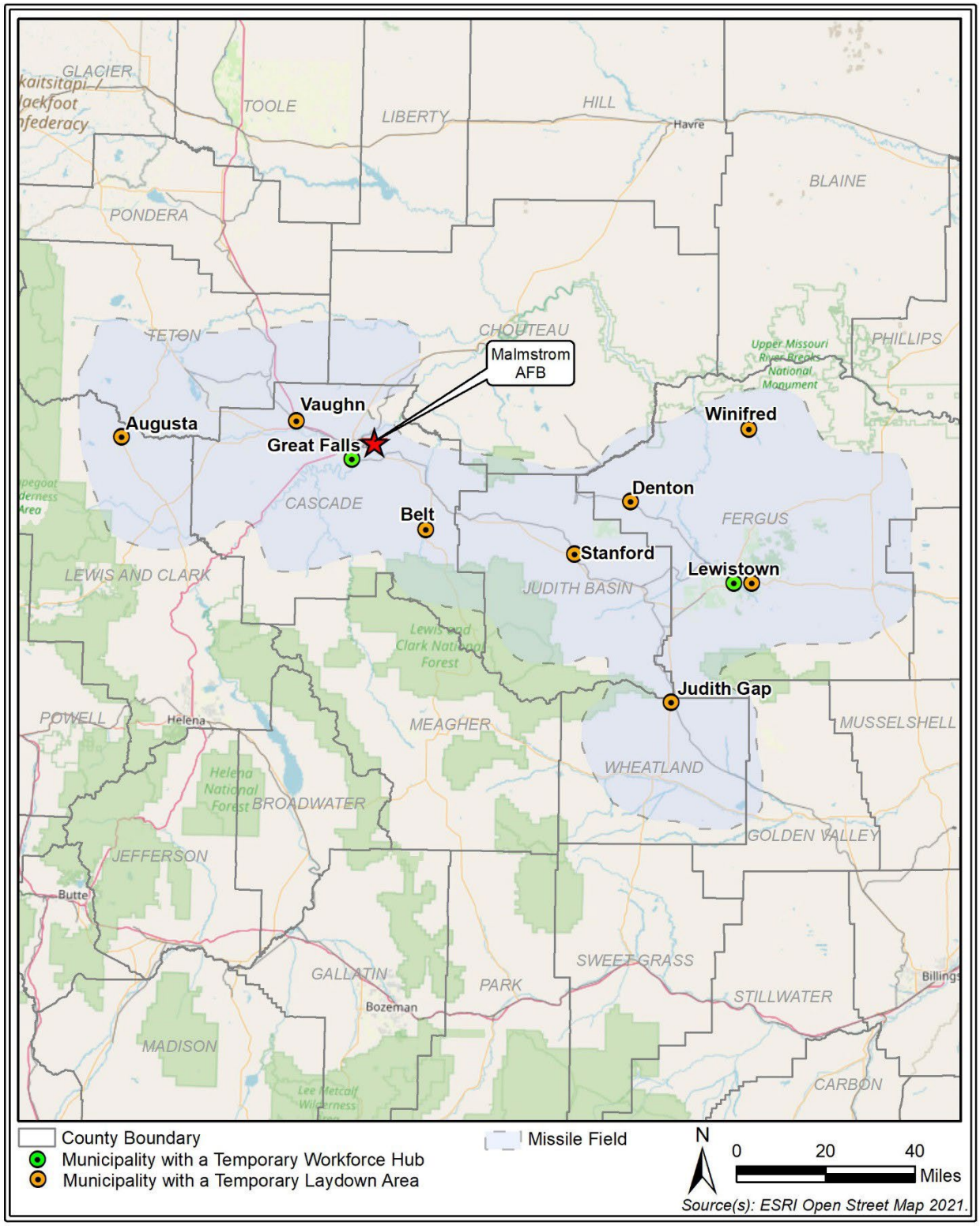


Figure 11. Workforce Hubs and Laydown Areas for Malmstrom AFB

Figure 12. On-Base Construction at Minot AFB

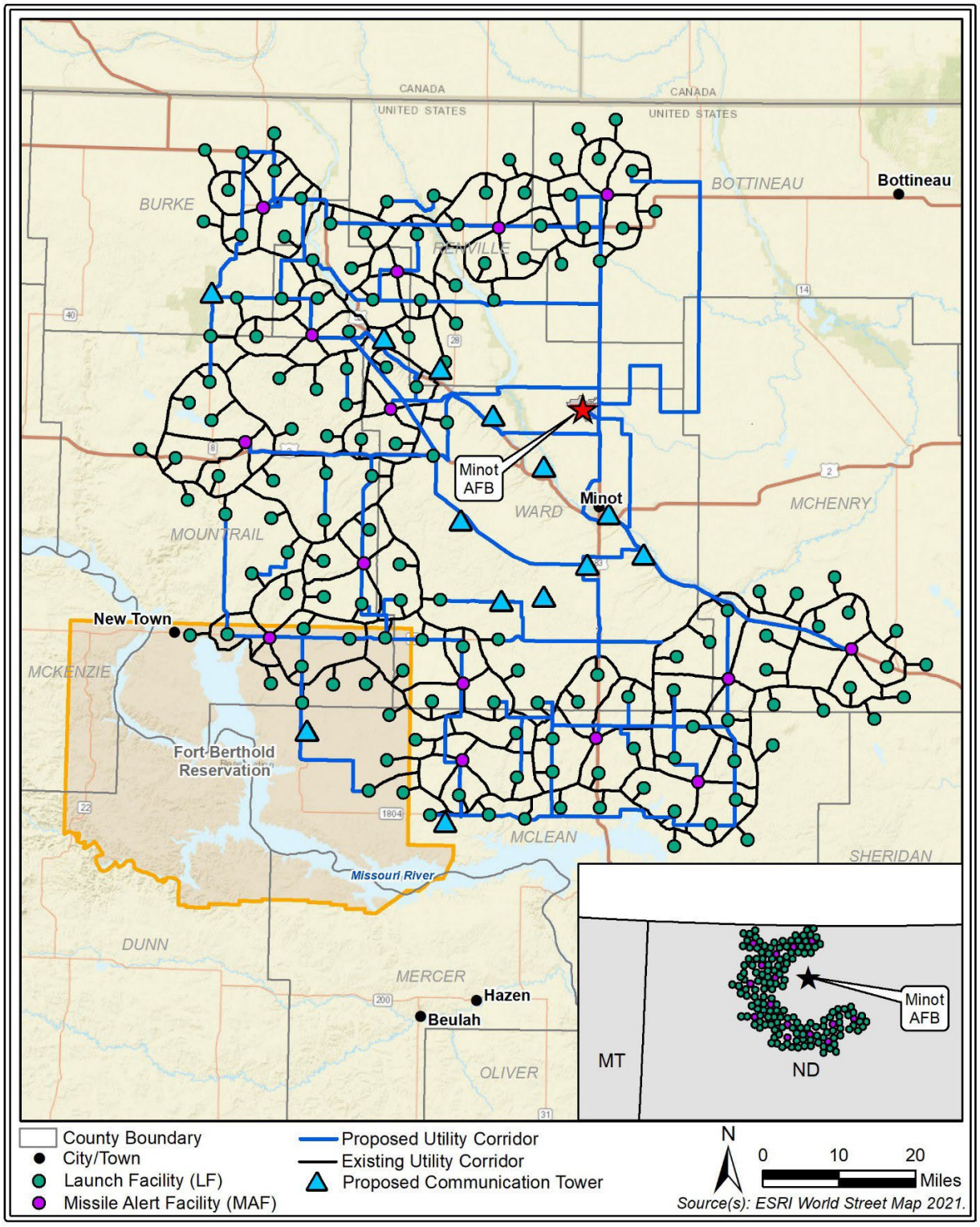


Figure 13. Off-Base Elements of the GBSD Deployment for the Minot AFB

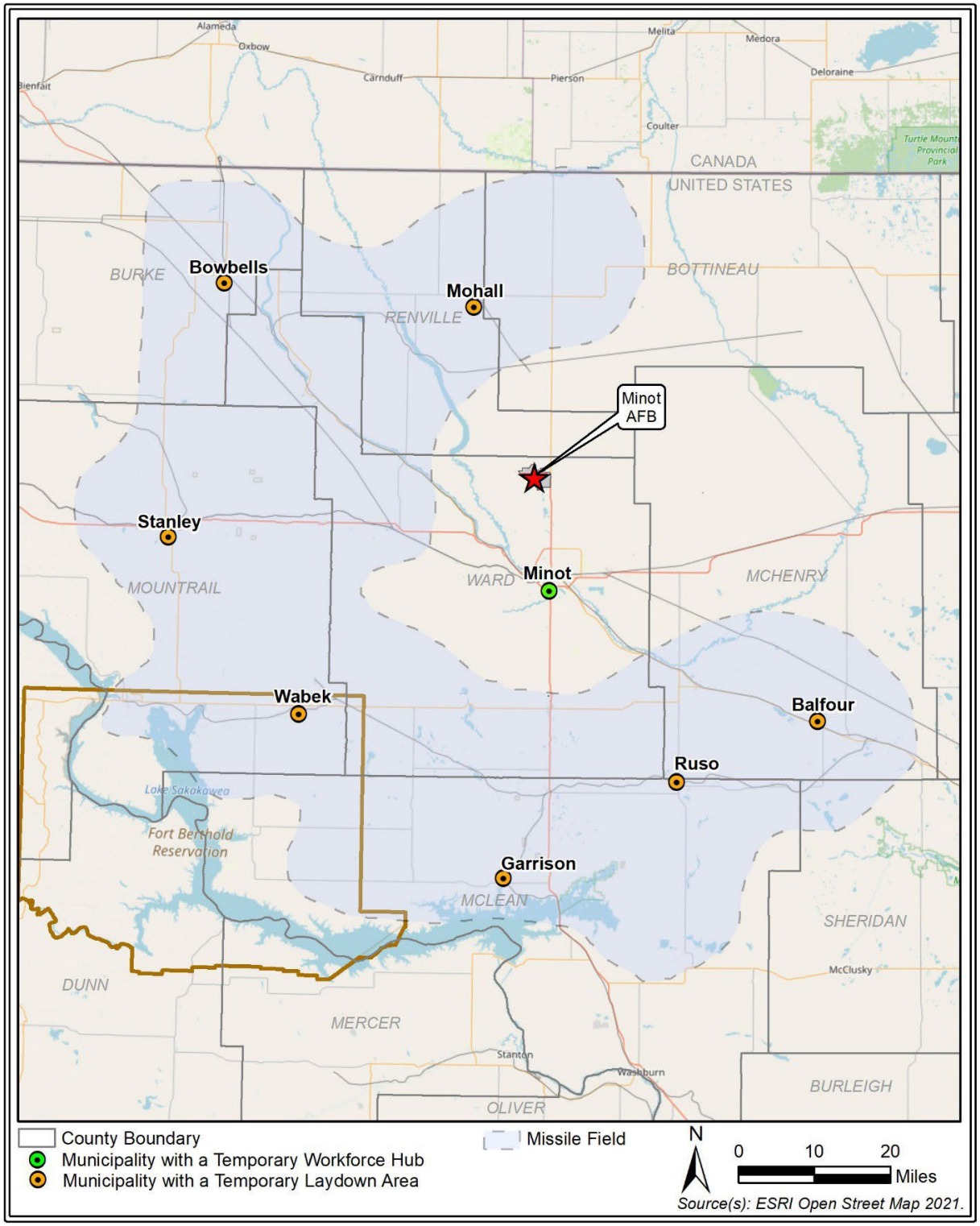


Figure 14. Workforce Hub and Laydown Areas for Minot AFB

Figure 15. On-Base Construction and Munitions Storage Area at Hill AFB

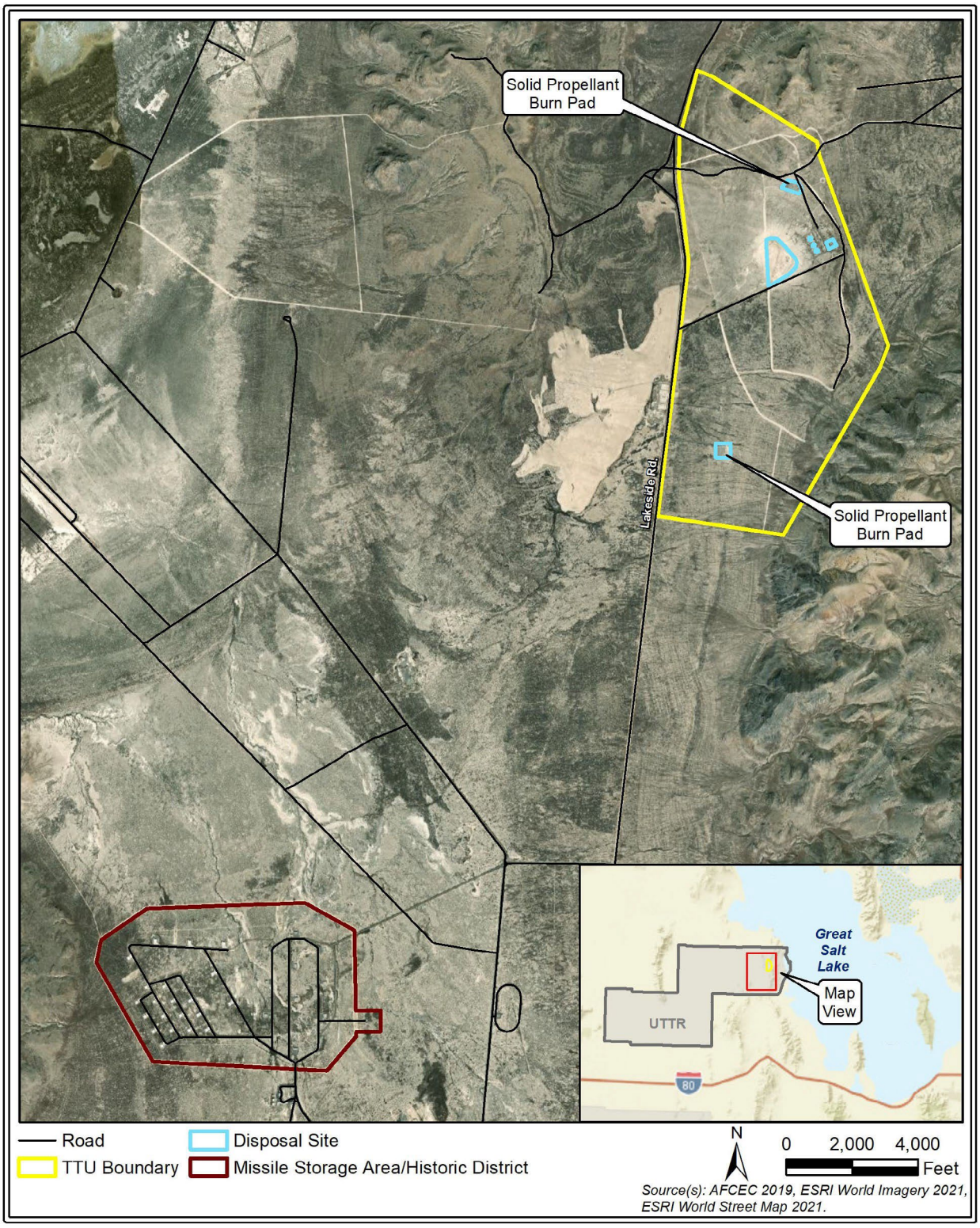


Figure 16. Thermal Treatment Unit and Missile Storage Area at UTTR

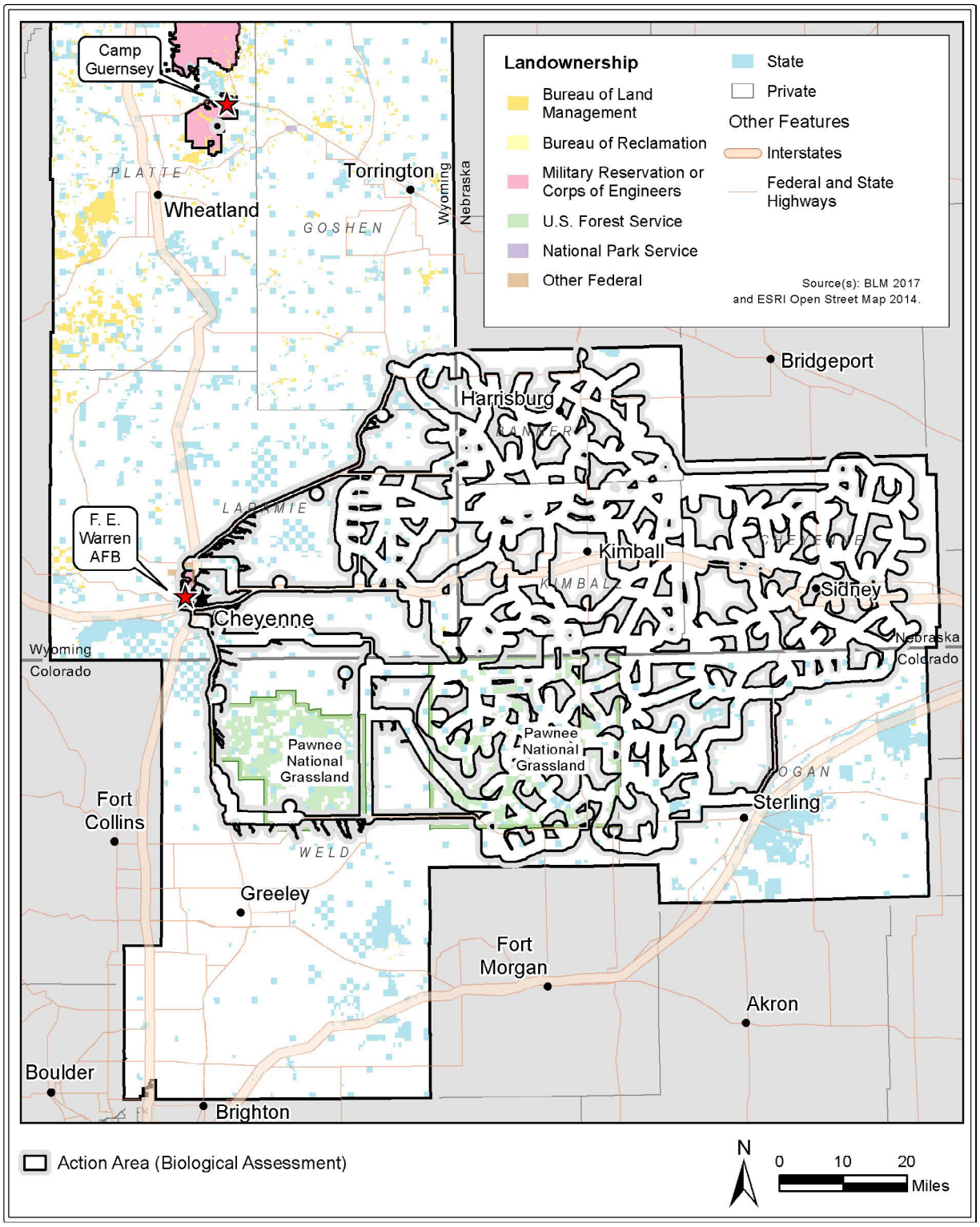


Figure 17. F.E. Warren Portion of the Action Area Overview

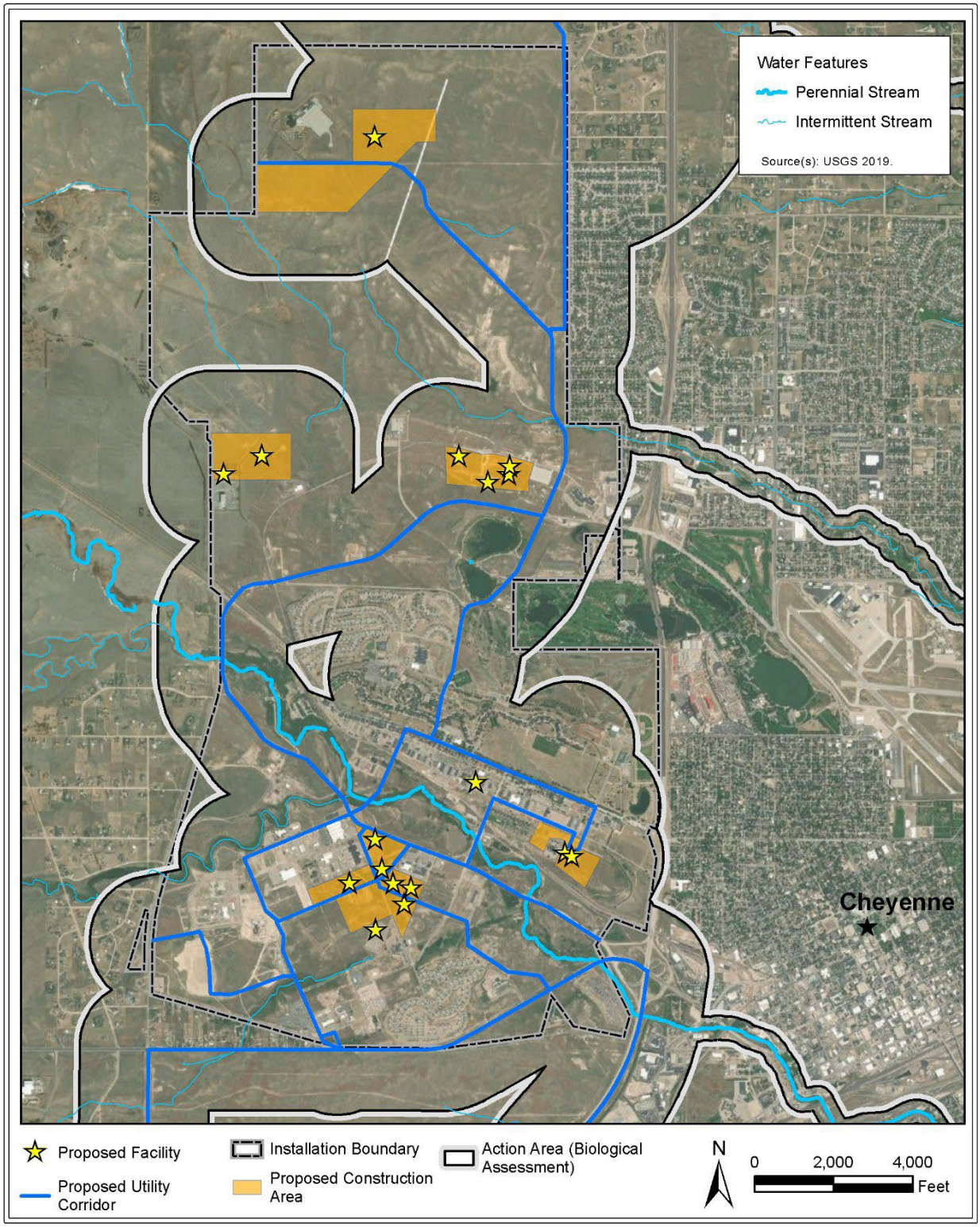


Figure 18. F.E. Warren AFB Portion of the Action Area

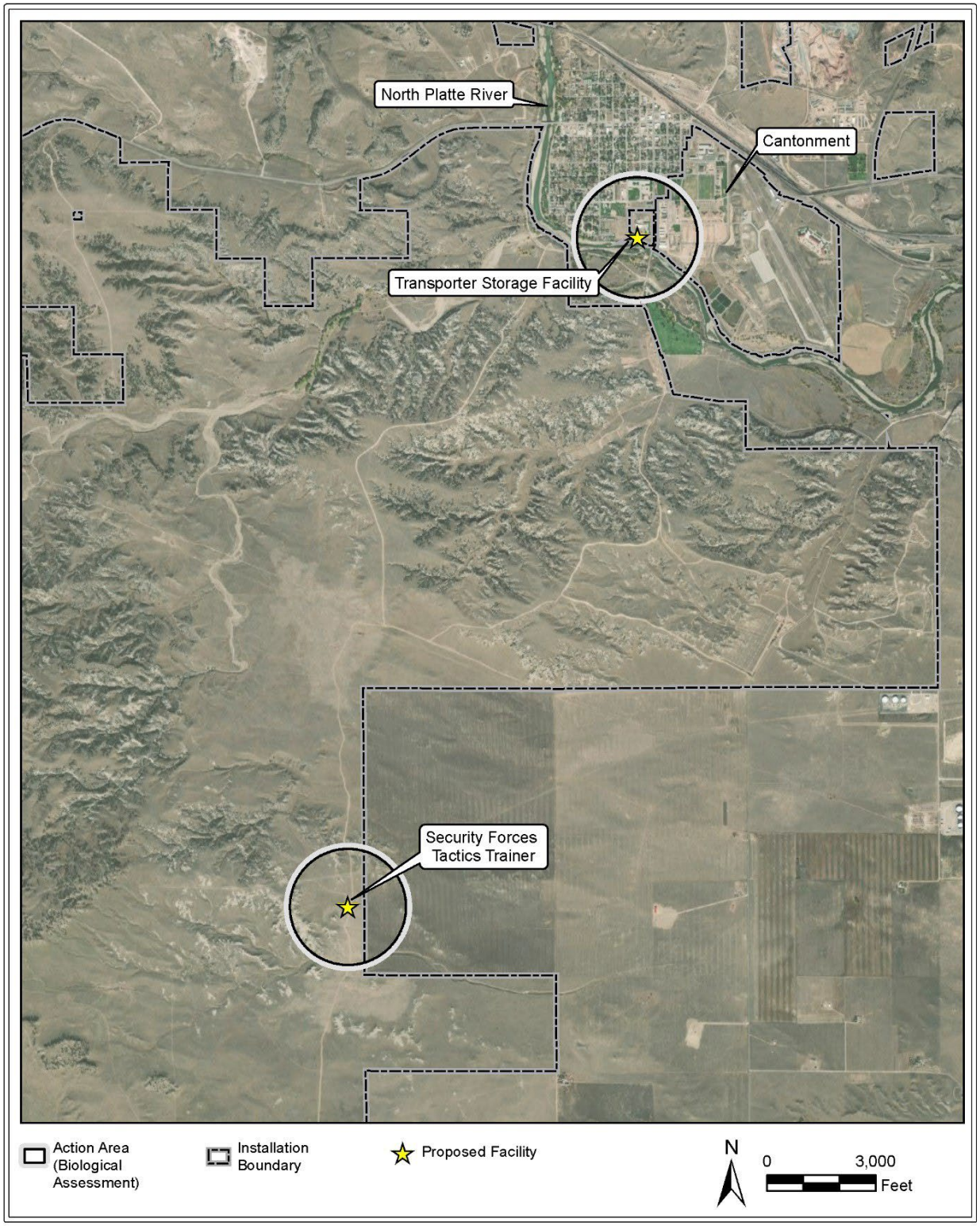


Figure 19. Camp Guernsey Portion of the Action Area

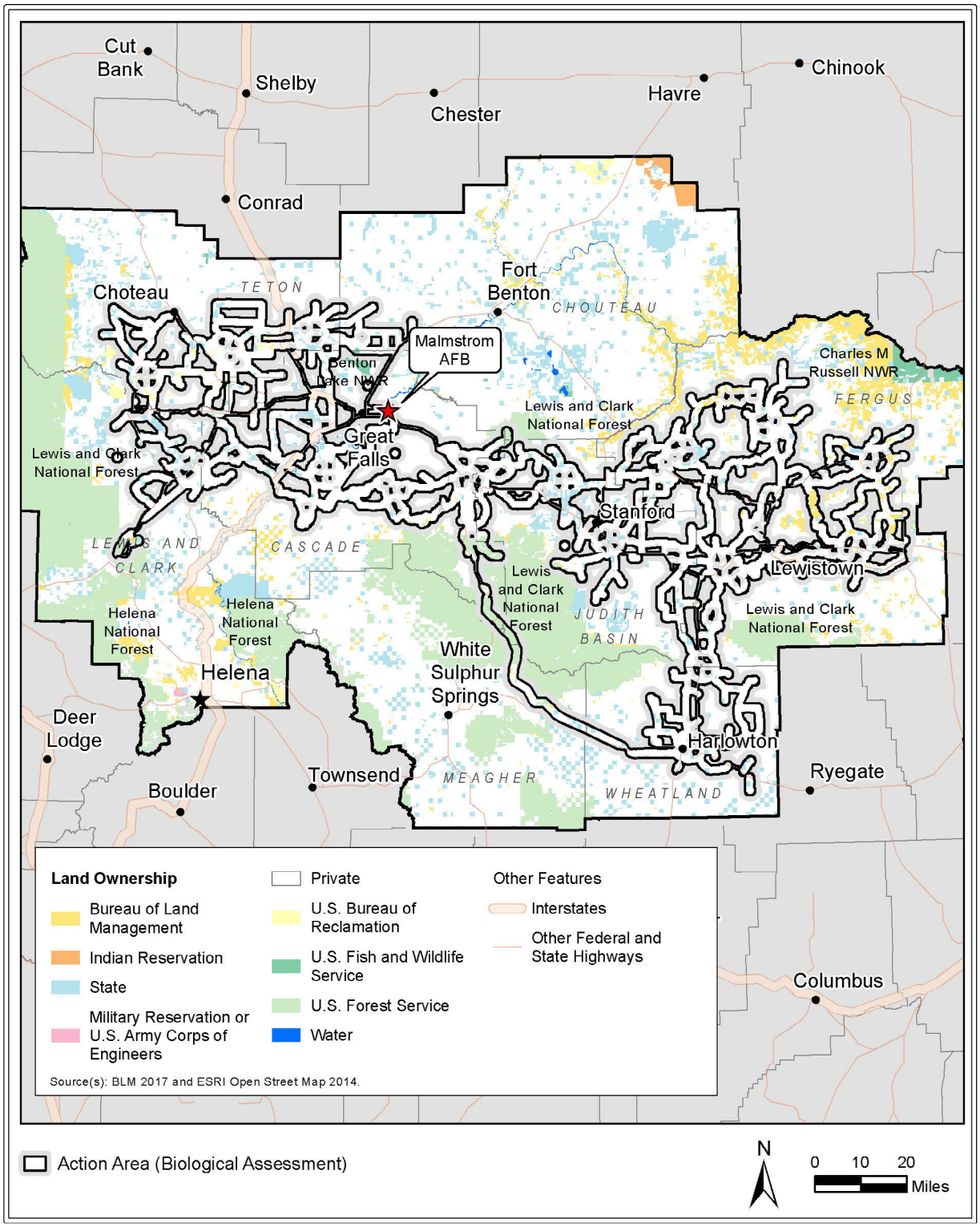


Figure 20. Malmstrom Portion of the Action Area Overview

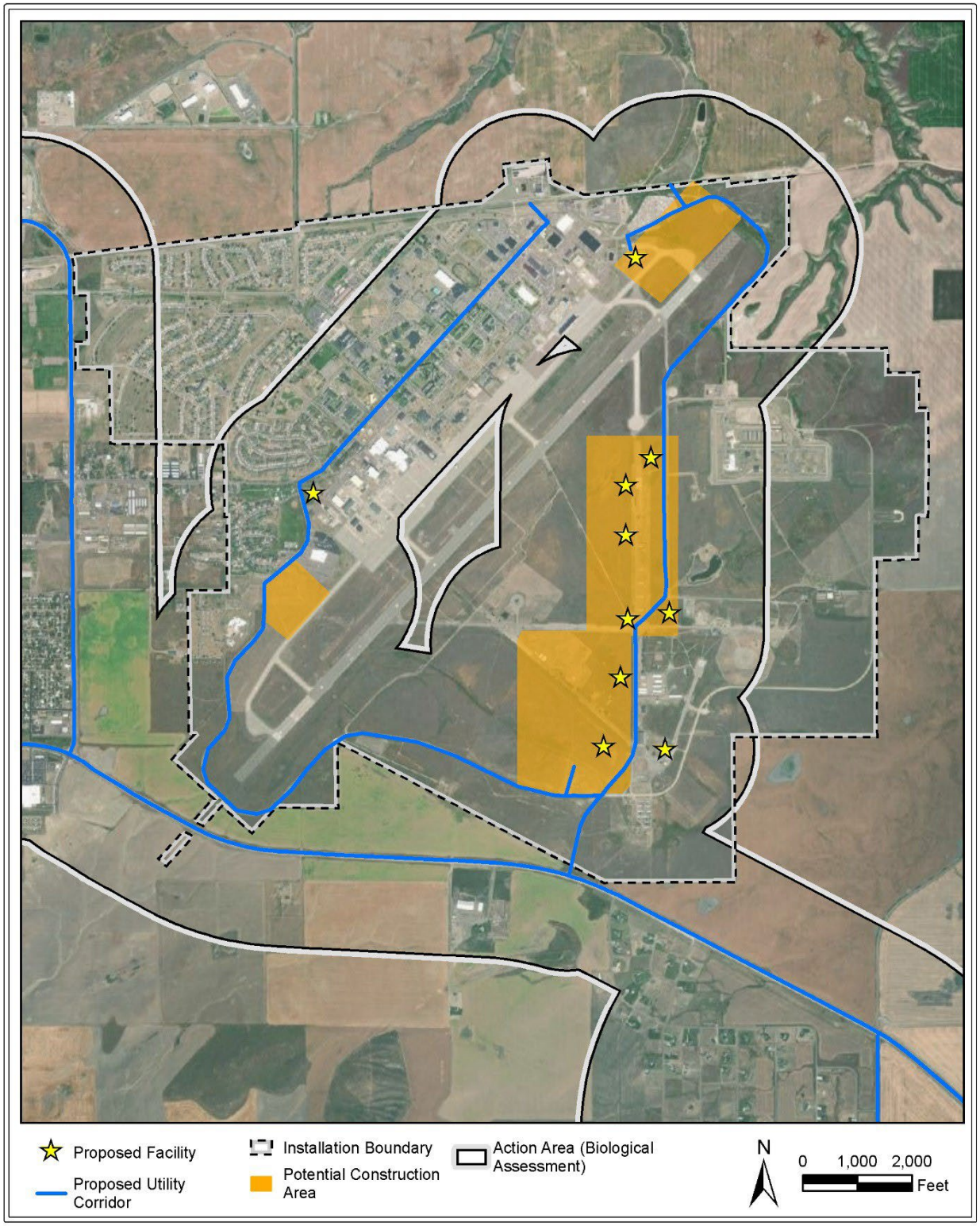


Figure 21. Malmstrom AFB Portion of the Action Area

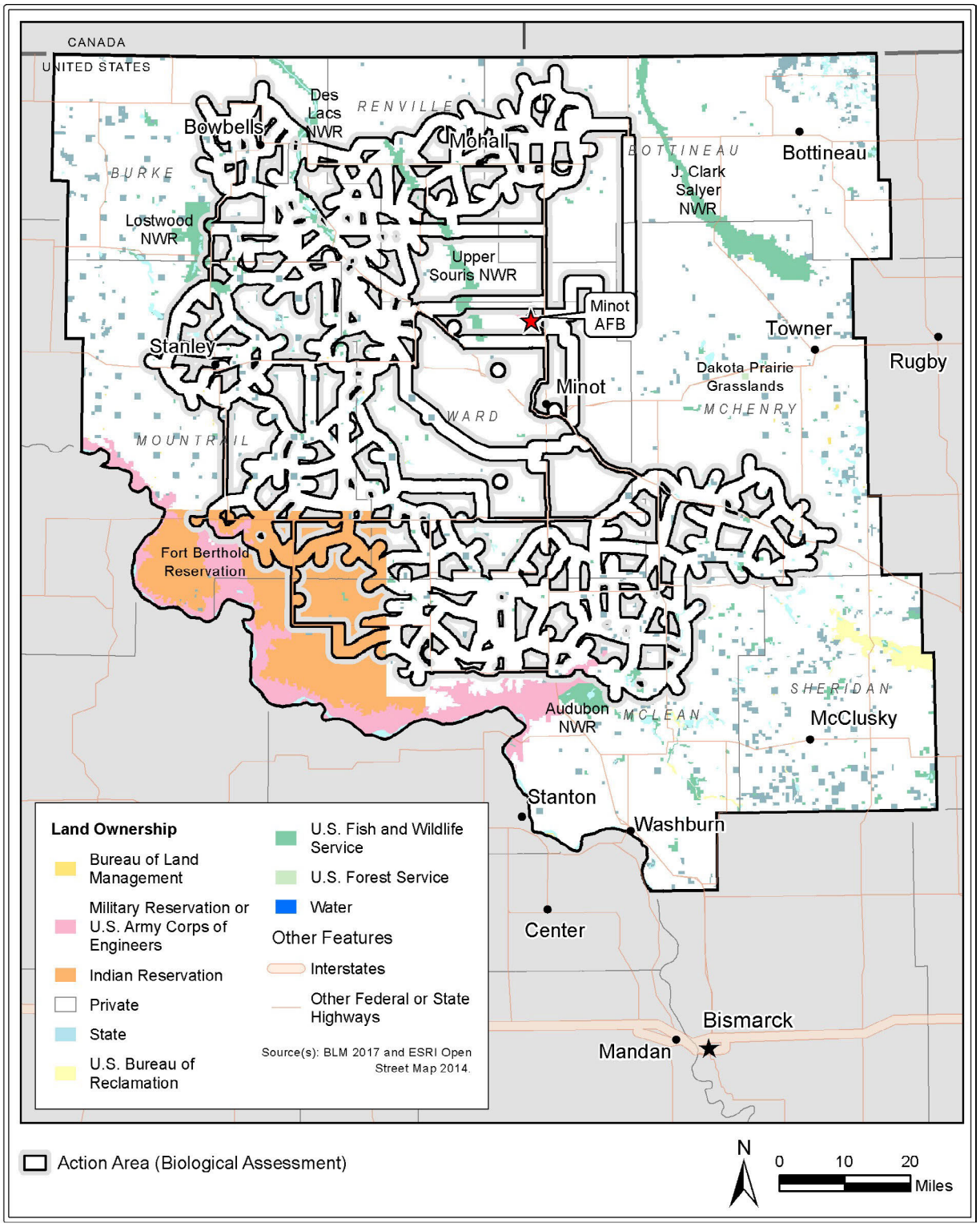


Figure 22. Minot Portion of the Action Area Overview

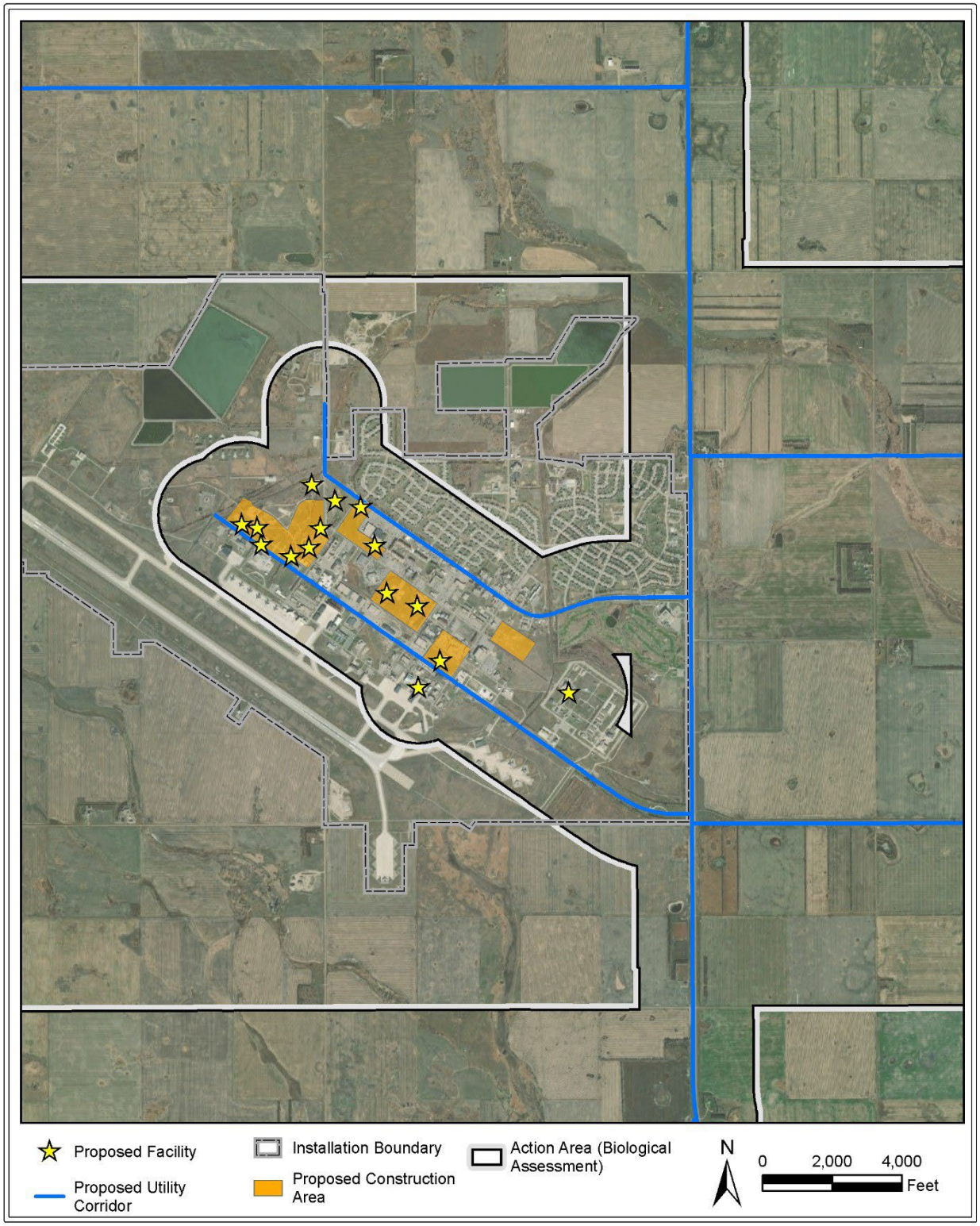


Figure 23. Minot AFB Portion of the Action Area

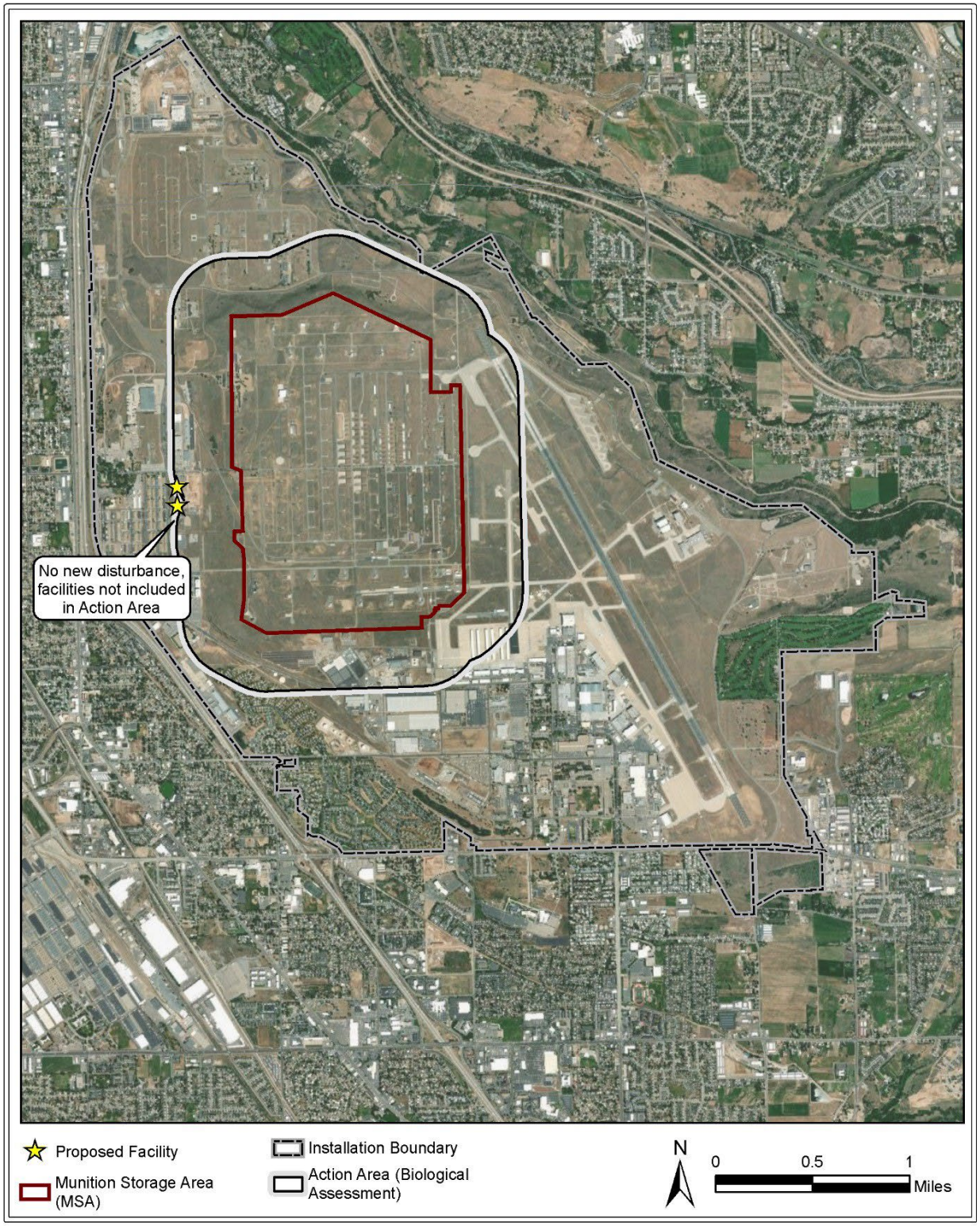


Figure 24. Hill AFB Portion of the Action Area

Figure 25. UTTR Portion of the Action Area

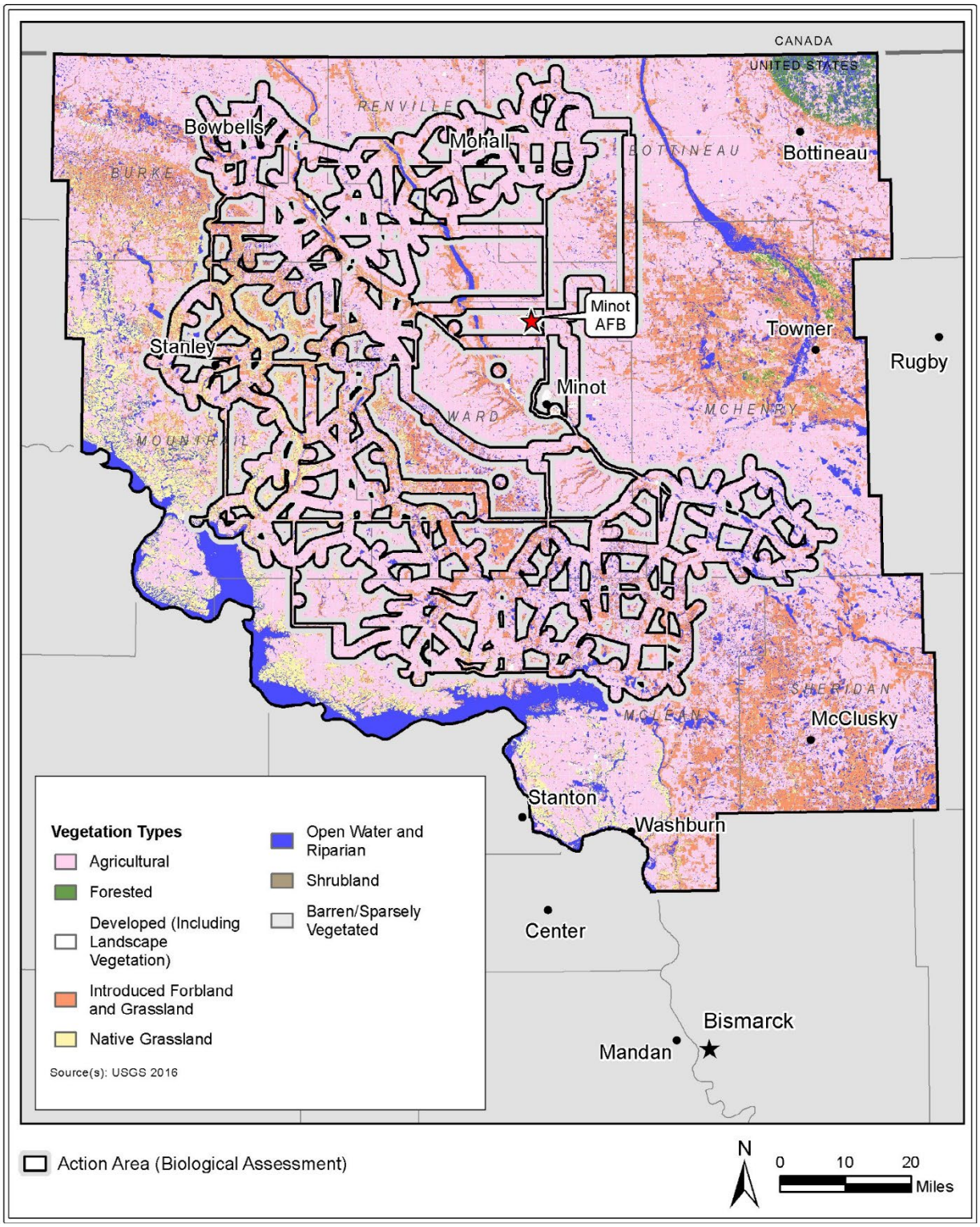


Figure 28. Minot Portion of the Action Area Vegetation Types

Page intentionally left blank.

E.5 SENTINEL BIOLOGICAL OPINION AMENDMENT, 19 JANUARY 2023

Page intentionally left blank.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Mountain-Prairie Region

IN REPLY REFER TO:
FWS/R6/2022-0054024

MAILING ADDRESS:
Post Office Box 25486
Denver Federal Center
Denver, Colorado 80225-0486

STREET LOCATION:
134 Union Boulevard
Lakewood, Colorado 80228-1807

Howard N. Kosht
Executive Director, Strategic Plans, Programs, and Requirements
HQ AFGSC A5/8
66 Kenney Avenue
Barksdale AFB, LA 71110

Subject: Biological Opinion Amendment on the U.S. Air Force's Proposed Sentinel Ground Based Strategic Deterrent Intercontinental Ballistic Missile System and Minuteman III Decommissioning, 2022-0054024

Dear Mr. Kosht:

This document transmits the U.S. Fish and Wildlife Service's (Service or USFWS) biological Opinion (Opinion) Amendment regarding U.S. Air Force's (USAF) proposal to; (a) deploy the Ground Based Strategic Deterrent (GBSD) intercontinental ballistic missile (ICBM) system, officially named Sentinel, and (b) decommission and dispose of the Minuteman III (MMIII) ICBM system (cumulatively proposed action or Project). This Amendment analyzes the Project's effects on the whitebark pine (WBP) (*Pinus albicaulis*), newly listed as a threatened species. This Amendment was prepared pursuant to section 7(a)(2) of the Endangered Species Act (ESA or Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

The Service issued the original Opinion for this Project on December 23, 2022. When received by the USAF, they determined that they should formally consult on the whitebark pine due to its pending listing as a threatened species on Jan 16, 2023. This Amendment to the original Opinion only analyzes effects to the WBP related to implementation of the Project. Effects to WBP are limited to the Malmstrom AFB portion of the overall Project, therefore, our analysis will be limited to the proposed actions taking place in association with that facility.

The purpose of the Project is to replace all land-based MMIII missiles deployed in the continental U.S. with the GBSD weapon system. The need for the action is to comply with Public Law 115-232, as outlined above. Under federal law and to meet national security requirements, the USAF must implement a strategy "to accelerate the development, procurement, and fielding of the ground based strategic deterrent program" (John S. McCain National Defense Authorization Act for Fiscal Year 2019 [Public Law 115-232 Section 1663]). The law directs:

> *…that the GBSD program includes the recapitalization of the full intercontinental ballistic missile weapon system for 400 deployed missiles and associated spares and 450 launch facilities, without phasing or splitting the program, including with respect to the missile*

flight system, ground-based infrastructure and equipment, appropriate command and control elements.

Implementing the action will ensure that the U.S. continues to have effective, responsive, and resilient ICBMs and associated infrastructure for the land-based leg of its nuclear triad and the capacity and adaptability to manage and respond to shifting global requirements. The proposed ICBMs and supporting upgrades would allow the U.S. to continue to offer long-term tangible evidence to both allies and potential adversaries of our nuclear weapons capabilities, thus contributing to nuclear deterrence and assurance and providing a hedge against arms competition.

This Opinion Amendment is based upon information in the following documents: (1) the 2022 USAF Biological Assessment (BA) and supplements (USAF 2022); (2) the Service's Standing Analysis for the WBP (Service 2023); (3) biological literature cited herein (see Literature Cited); and (4) other information in our files. A complete project record of this consultation is on file at the Service's Mountain Prairie Regional Office (R6).

On July 5, 2022, the U.S. District Court of the Northern District Court of California vacated the 2019 regulations implementing section 7 of the Endangered Species Act (ESA). On September 21, 2022, the Ninth Circuit Court of Appeals granted a request to stay the U.S. District Court of Northern California's July 5, 2022, order that vacated the 2019 ESA regulations. On November 14, 2022, the U.S. District Court of Northern California issued a final ruling remanding the 2019 regulation revisions back to the Service for further action, but, determined vacatur of the 2019 regulations was not appropriate. As a result, the 2019 regulations are again in effect, and the Service has relied upon the 2019 regulations in rendering this Opinion. However, because the outcome of the legal challenges to 2019 ESA Regulations is still unknown, we considered whether our substantive analyses and conclusions in this consultation would have been different if the pre-2019 regulations were applied. Our analysis included the prior definition of "effects of the action," among other prior terms and provisions. We considered all the "direct and indirect effects" and the "interrelated and interdependent activities" when determining the "effects of the action." As a result, we determined the substantive analysis and conclusions would have been the same, irrespective of which regulations applied.

Introduction

The USAF developed a BA for their original section 7(a)(2) consultation request to analyze the effect of the proposed action on Service trust resources (USAF 2022). The USAF determined that their proposed action may affect, and is likely to adversely affect two species, which were analyzed in the original Opinion. The USAF also made may affect, but is not likely to adversely affect determinations for eight species. They also determined that the project may affect, but is not likely to adversely affect critical habitat for three species. A determination of not likely to jeopardize was provided for three proposed species, including the WBP, and a conditional effects determination of not likely to jeopardize was made for one candidate species. An informal section 7 concurrence was appended to the original Opinion for all of these species.

At the time the BA was developed, the WBP was proposed for listing as a threatened species. In the BA, the USAF included an analysis of the effects to WBP and made a "not likely to jeopardize" determination. They decided not to conference on the species since the timing of a listing determination was unclear. The Service concurred with the USAF "not likely to jeopardize" determination for the WBP in the informal consultation that was appended to the original Opinion.

Consultation History

Pursuant to ESA Section 7(a)(2), Federal action agencies are required to consult with the Service if their project may affect any listed species (50 CFR § 402.14[a]). The USAF initiated early and informal consultation with the Service on April 23, 2020, conducting teleconferences and coordinating with points of contact (POCs) within the states in which GBSD deployment-related project elements would be implemented (Colorado, Montana, Nebraska, North Dakota, Utah, and Wyoming) to facilitate regional and species-specific discussions. During these early opportunities to communicate, USAF personnel provided Service representatives with a summary of the proposed GBSD deployment program, discussed the consultation process, and received initial input on biological resources.

- April 23, 2020, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: Initiation of informal consultation with USFWS; initial discussion included only USFWS representatives in Utah who provided USAF staff with additional USFWS contacts needed for the project.
- May 27, 2020, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: Discussion with USFWS including multiple representatives from different states (Colorado, Montana, North Dakota, Utah, and Wyoming) regarding project and biological survey schedules; coordination between USFWS Ecological Services Field Office (ESFO) and Regional Office (RO) representatives.
- June 3, 2020, Email from USFWS: Agency POC provided subject matter experts and field office POCs for contact list update.
- June 11, 2020, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: Malmstrom AFB threatened and endangered species discussion included project schedules, biological study plan review, wetland impacts, species and survey routes; consultation with Montana about sage-grouse was recommended by USFWS.
- June 18, 2020, Teleconference with USAF/Tetra Tech and USFWS. Summary: Discussion on Dakota skipper, the species habitat and survey of Minot AFB missile field, schedule, and criteria for take.
- June 19, 2020, Email from USAF: Minot AFB geographic information system (GIS) layers: USAF/Tetra Tech provided to USFWS GIS layers related to the proposed utility corridors.
- June 19, 2020, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: F.E. Warren AFB threatened and endangered species discussion included the project overview, biological study plan review, and request for USFWS input on the level of analysis required to issue a BO.
- June 22, 2020, Email from USFWS: Dakota skipper habitat: USFWS responded to questions regarding botanical surveys for use in Dakota skipper habitat analysis.
- June 24, 2020, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: Minot AFB

threatened and endangered species discussion included the project overview, biological study plan review, and request for USFWS input on the level of analysis required to issue a BO.

- July 15, 2020, Email from USFWS: Whooping crane information: USFWS provided modeling information to Tetra Tech, including a contact with USFWS for the sighting database.
- July 16, 2020, Email from USAF: USAF staff provided Tetra Tech with a database link for a pollinator study conducted by North Dakota State University.
- July 17, 2020, Teleconference with USFWS and Tetra Tech: Whitebark pine and sage-grouse discussion regarding the low potential for whitebark pine to occur in the utility corridor and timing restrictions associated with occupied grouse lek areas.
- August 5, 2020, Emails from USFWS: USFWS and Tetra Tech discussed survey windows and locations for Ute ladies'-tresses near the F.E. Warren AFB project area.
- September 14, 2020, Email from USFWS: USFWS lead POC provided Tetra Tech with comments on the draft outline of the BA from USFWS ESFOs.
- September 22, 2020, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: BA outline discussion; a summary of USFWS comments was covered and clarification was gained from USFWS staff on species of concern (SOC) pertaining to the National Environmental Policy Act (NEPA) Environmental Impact Statement (EIS) and regarding direct and indirect effects.
- October 7, 2020, Email from USFWS: USFWS provided follow-up information to the September teleconference on SOC for the EIS and added two species not previously discussed.
- December 9, 2020, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: USFWS discussion of BA opened with a summary of EIS scoping comments to date, updates to the project description, discussion of communication towers proposed, workforce hubs and laydown areas; the species list was reviewed and discussed, including whether to include SOC, candidate, and de-listed/listed species.
- January 19, 2021, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: USFWS discussion of BA began with a review of the updated BA outline; further discussion included the action area and possible additional species within that area; USFWS was asked to provide any known conservation measures for species in the project list; species updates that need to be addressed, including candidate and SOC (for EIS).
- January 19, 2021, Email from USFWS: USFWS provided narrative information on the northern long-eared bat hibernacula and included data for roost trees as requested for the species in North Dakota.
- January 19, 2021, Email from USFWS: USFWS provided Dakota skipper conservation guidelines as attachment to email.
- January 19, 2021, Email from USFWS: USFWS provided links to the whooping crane model.
- January 19, 2021, Email from USFWS: USFWS provided whooping crane timing restrictions.
- January 20, 2021, Email from USFWS: USFWS provided information on the range of regal fritillary and the analysis of subspecies.
- January 27, 2021, Email from USFWS: USFWS provided information regarding red knot in a D-key as well as timing restrictions for piping plover.

- January 27, 2021, Email from USFWS: USFWS provided attachments of scholarly articles the Service uses that indicate western bumble bee range maps.
- February 4, 2021, Email from USFWS: USFWS provided grizzly bear conservation measures (food-storage measures).
- March 17, 2021, Email from USFWS: USFWS provided direction that Preble's meadow jumping mouse (Preble's) range does not include Goshen County, WY.
- March 30, 2021, Teleconference with USFWS and Tetra Tech: Monarch Butterfly discussion on duration and seasonal timing of effects.
- December 9, 2021, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: Dakota skipper discussion included effects, survey types, and conservation measures for Dakota skipper and other invertebrate species.
- January 13, 2022, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: Communication tower discussion regarding conservation measures for construction and operation of communication towers and available USFWS guidance.
- January 18, 2022, Teleconference with USFWS, USAF/GBSD, and Tetra Tech: Ute ladies'-tresses, Colorado butterfly plant, and Preble's discussion included data being used, field surveys, and conservation measures.
- March 11, 2022: Teleconference with USFWS, USAF/GBSD, Wyoming Natural Diversity Database (WYNDD) and Tetra Tech: Discussion of Preble's habitat at F.E. Warren AFB and use of data in EIS and BA.
- May 10, 2022: Email from USAF to USFWS including the official submittal of the Project BA and request to initiate formal section 7 consultation.
- June 13, 2022: Meeting with the USAF and Tetra Tech to discuss USFWS comments on the USAF GBSD BA.
- June 14, 2022: Email from the USFWS to USAF providing notice of a change in status for the wolverine to proposed threatened and indicated an effects analysis for wolverine would need to be addressed in a BA amendment.
- June 15, 2022: The USFWS submitted a letter to the USAF noting that the GBSD BA did not contain sufficient information to initiate formal section 7 consultation on the proposed project.
- June 16 and 21, 2022: Emails from the USFWS to the USAF/GBSD and TetraTech providing input on additional information or revisions needed to the BA.
- July 7, 2022: Email and Attachments from Air Force to USFWS providing a complete comment response matrix, which addressed USFWS input and comments received. Six additional attachments to the BA also were submitted on this date with the comment response matrix, covering proposed and revised conservation measures; providing Dakota skipper habitat survey reports; providing a project timing assumptions document; additional detail on piping plover designated critical habitat; the wolverine assessment; and additional information for Canada lynx.
- July 12, 2022: USAF provided the USFWS with the BA comment response matrix, letter, and BA appendices.
- August 9, 2022: USFWS Refuges requested the USAF provide them with maps of the proposed project infrastructure locations in order to determine if any adverse effects to refuge property is likely.
- August 10, 2022: Conference call between the USFWS, USAF, and Tetra Tech to discuss updated information for the BA and species effect determinations. Discussion of the BA

effect determinations and potential updates to evaluations in the BA including potentially lessening existing determinations. Species discussed were the Canada lynx, whitebark pine, Dakota skipper, northern long-eared bat, and whooping crane. The USFWS suggested that whitebark pine may be listed as a conference opinion species on this call. Shortly after call completion, USFWS sent the updated Canada lynx range map via electronic communication.

- August 15, 2022: Email exchange between the Service and Tetra Tech to update effects analysis and determination on several listed species, including; Canada lynx and critical habitat, whitebark pine, Dakota skipper, Northern long-eared bat, and whooping crane. USAF provided USFWS August 10 meeting minutes in their email response which included a summary regarding the species discussed on the August 10, 2022, call. The email contained a request for a formal conference opinion for whitebark pine and an updated effects determination for the whooping crane.
- August 31, 2022: The USAF and Tetra Tech provided requested information to the USFWS on revisions to their GBSD BA and effects determinations, responding to all of the issues raised in our June 15, 2022, correspondence.
- September 14, 2022: Teleconference between the USFWS, USAF, Tetra Tech, and the USFS to discuss potential adverse effects to grizzly bear and Canada lynx on USFS property related to the GBSD project.
- September 19, 2022: The USFWS notified that all major concerns with the GBSD BA had been addressed and formal consultation was initiated. Additional coordination was ongoing to discuss minor issues and to coordinate with the USFS on effects to grizzly bear and Canada lynx.
- September 22, 2022: The USFW provided a GIS shapefile to Tetra Tech and the USAF showing the locations of USFWS protected wetland easements within ½ mile of the proposed utility corridor for the Malmstrom AFB portion of the project.
- October 7, 2022, Email between HLC NF and Tetra Tech—Dave Kemp from HLC NF confirmed the method was acceptable to update the Canada Lynx LAU LB-15 to “early stand initiation” structure class within the Yogo fire boundary.
- October 17, 2022: Teleconference between the USFWS, USFS, and Tetra Tech to discuss the effects analysis for grizzly bear and Canada lynx.
- October 21, 2022: Additional coordination between the USFWS, USAF, Tetra Tech, and the USFS on potential GBSD effects to the grizzly bear and Canada lynx.
- November 2, 2022: The USAF provided revisions to the BA related to their effects determination for the grizzly bear, Canada lynx and its designated critical habitat, and a non-jeopardy determination for the proposed endangered tri-color bat.
- November 10, 2022, Email and Attachments from Tetra Tech to USFWS and USAF providing the BA comment responses and attachments A, B, C, D, E, F, G, and H to assist USFWS with their timeline of determinations review and Biological Opinion development.
- November 29, 2022: The USAF submitted their final signed BA revisions to the Service.
- December 5, 2022: Email attachment from USFWS to USAF providing the draft informal consultation for USAF review and comment. USFWS stated the final informal consultation will be an appendix to the formal consultation.
- December 15, 2022: Email attachment from USFWS to USAF providing the draft formal consultation, which included analysis of effects to the Dakota skipper and piping plover, for review and comment.

- December 21, 2022: Email from the USAF to the USFWS with comments on the draft formal consultation.
- December 23, 2022: The Service submitted the final Opinion and informal consultation appendix to the USAF.
- December 23, 2022: Upon notification that the WBP would be listed as a threatened species on January 16, 2023, the USAF requested to initiate formal section 7 consultation on the species. The Service concurred with this request, noting that sufficient information was contained in the May 2022 BA and August 2022 BA supplement to complete the consultation.

BIOLOGICAL OPINION

Proposed Action

A complete project description of the proposed action is included in the original Opinion. A short summary description is provided here for the WBP consultation analysis and includes specific information on the Malmstrom AFB portion of the project, which is the only area of the project where WBP occurs.

The purpose of the proposed action is to replace all land-based MMIII ICBMs deployed in the continental United States with GBSD ICBMs. All components of the MMIII missile would be replaced. All missile alert facilities (MAFs), launch facilities (LFs), communication systems, infrastructure, and technologies would be modernized or replaced as necessary to support the GBSD weapon system. The existing MAFs and LFs would be updated extensively to a completely refurbished condition to meet the requirements of the GBSD system. GBSD deployment activities would not include generating or disposing of nuclear material, and the number of land-based nuclear missiles in the continental United States would not change.

Deployment would primarily occur at F.E. Warren Air Force Base (AFB) in Wyoming; Malmstrom AFB in Montana; and Minot AFB in North Dakota. Maintenance, training, storage, and support actions would occur at these three main operating bases as well as at Hill AFB and Utah Test and Training Range (UTTR) in Utah, Camp Guernsey in Wyoming, and Camp Navajo in Arizona. Elements of the project would include the following:

- On-base elements of the GBSD deployment, including construction, modification, operation, and maintenance of on-base facilities and infrastructure.
- Off-base elements of the GBSD deployment, including updating MAFs and LFs to completely refurbished condition, establishing new utility corridors, utility work within existing utility corridors and easements, constructing new communication towers, and deploying and maintaining the GBSD weapon system.
- Decommissioning and disposing of the MMIII weapon system.

Table 2 (in the original Opinion) outlines the elements of the proposed action that would be implemented at each installation and a detailed discussion follows the table. All elements would be implemented at F.E. Warren, Malmstrom, and Minot AFBs. Hill AFB would provide support

facilities and MMIII decommissioning activities; Camp Guernsey would provide on-base training and support activities; and UTTR and Camp Navajo would support storing and demilitarizing MMIII missiles.

GBSD system deployment and MMIII disposal activities are projected to begin in late 2023, starting at F.E. Warren AFB, then at Malmstrom AFB, and finally at Minot AFB. Activities at F.E. Warren, Malmstrom, and Minot AFBs and throughout their missile fields would be implemented in phases, either concurrently or consecutively. However, the USAF would maintain its warfighter commitment and nuclear readiness posture at all times. Deployment of the GBSD weapon system would be completed by the mid-2030s, and GBSD would remain viable until at least 2075.

Malmstrom AFB

The proposed action includes construction of on-base facilities, additional personnel, and missile maintenance and security operations at Malmstrom AFB. It also includes construction activities at the MAFs and LFs, establishment of new utility corridors between the base and selected MAFs and LFs, utility work within the existing utility easements and corridors, constructing communication towers, and deployment of GBSD ICBMs throughout the Malmstrom AFB missile field.

On-Base Elements of the GBSD Deployment Construction: **Table 1** lists the proposed on-base facility and infrastructure improvements at Malmstrom AFB, and **Figure 1** shows the location of each improvement project and potential areas of construction. The project includes the construction of nine facilities and multiplexes at the base, which would include operational, training, security, storage, and maintenance facilities to support the GBSD program. The facilities would either be sited as indicated or sited within the potential construction areas shown in Figure 1 All necessary parking would be integrated into the site layout and design of the facilities and areas. On-base construction of each facility would take 1–2 years and up to 11 years to complete all facilities. As the planning and design are not as developed as F.E. Warren AFB, the projected years of construction have not been provided.

Siting of the proposed on-base utility corridors is based on the best information available at the time the BA was being prepared. In the final design stages, the USAF anticipates that their locations might vary from those shown. To refine the siting of the on-base utility corridors, the selection guidelines for off-base utility corridors would be applied.

Although the majority of on-base elements would be in areas being used for similar purposes, limited traditional utility connections in addition to those supporting the MAFs and LFs would be required. Trenching for new utilities or rerouting of existing utilities would be conducted based on site-specific layouts and would primarily occur in already-disturbed areas with pavement, maintained open space (i.e., grassy medians or other open areas), or existing buildings. Backup generators would be installed at facilities on a case-by-case basis.

Operations: The level of operations and missile maintenance activities, including the overhaul, upgrading, and rebuilding of parts, assemblies, or subassemblies and the testing and reclamation of equipment, would gradually decline as the aging MMIII program is phased out and the more

modern GBSD program is deployed. Migrating to the new, more modular GBSD weapon system would ultimately reduce the level of the USAF's overall missile maintenance activity at the installation. In general, personnel associated with the MMIII program would transition to the GBSD program as it is deployed. Approximately 350 additional personnel would be required during the peak year, when the MMIII and GBSD programs would be operating simultaneously. Ultimately, however, there would be a reduction of approximately 80 personnel at the installation once the project is fully implemented. Those numbers represent a mix of USAF civilian and military personnel.

Table 1. On-Base Construction at Malmstrom AFB

Project	Description	Footprint area (sq ft)
Integrated Command Center	High-security facility and operations center for security, cybersecurity, and other functions.	51,000
Integrated Training Complex	Facility for missile operations and maintenance training and for SF field training.	80,000
Consolidated Maintenance Facility	Facility for squadron offices, codes vault, and storage for missile and LF maintenance crews. Complex includes TE test facility and an equipment and tool storage facility.	148,484
Missile-Handling Administrative Building	Administrative facility to support the Missile-Handling and Storage Facility.	4,400
Missile-Handling and Storage Facility	Facility with explosive safety setbacks required to store and transfer missile components to and from specialized vehicles.	25,000
Transporter Storage Facility	Building for storing TEs, support vehicles, and equipment.	22,000
Field Depot	Facility for infrastructure maintenance teams to work on LFs. Depot also includes equipment and work vehicle storage.	5,000
Program Integration Office [a]	Temporary use of existing space for setup and preparation for GBSD program-associated construction.	20,000
PSRE Storage Facility [a]	PSRE storage facility to support the Missile-Handling Administrative Building.	5,000
SF Tactics Trainer	Facility to simulate a half-hole LF for security training purposes.	2,000
Maintenance Training Facility Conversion [a]	Facility used to train technicians in aspects of maintaining missiles in the on- base LF.	-

[a] Renovation of existing facilities.

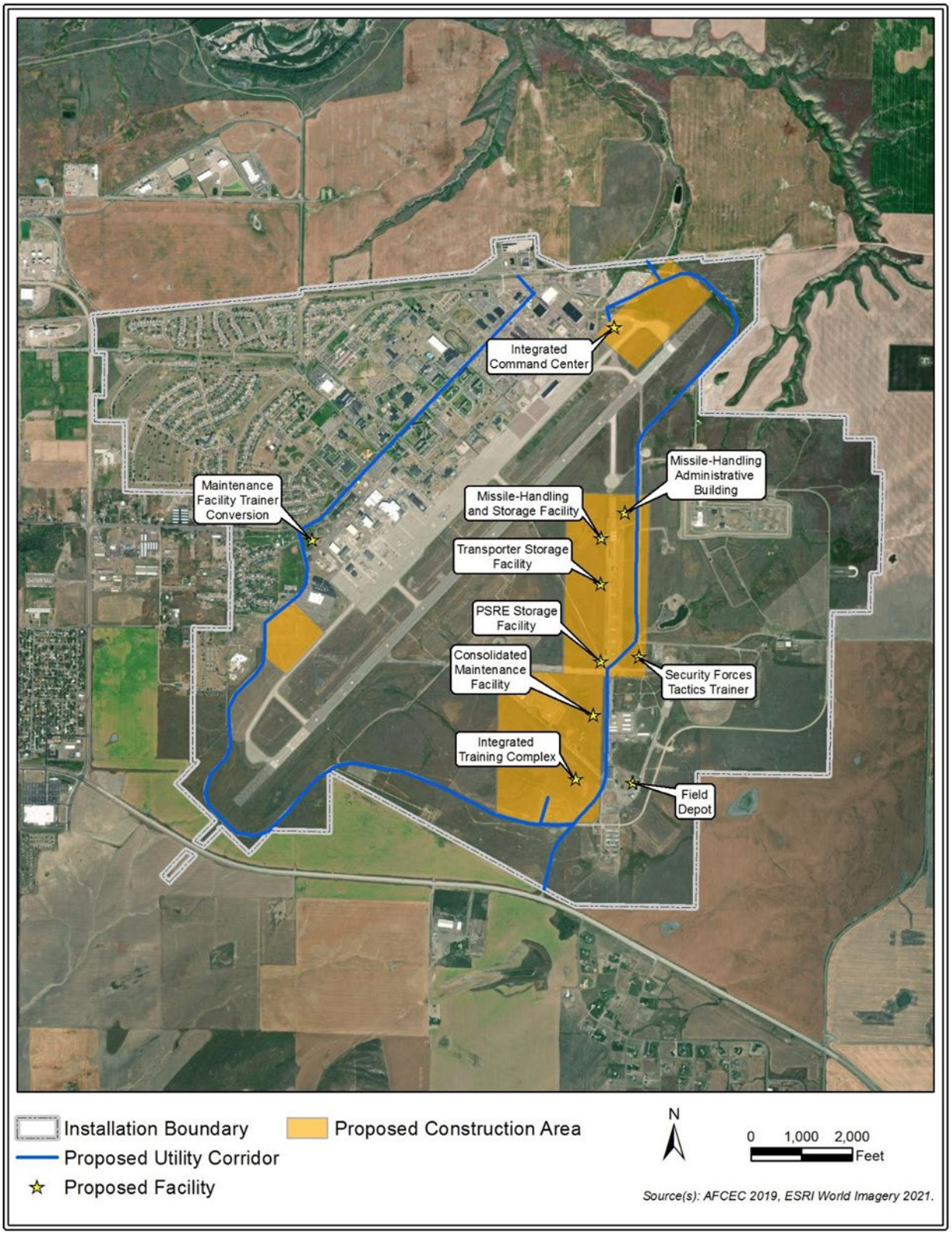


Figure 1. Malmstrom AFB Project Locations and Construction Areas

Off-Base Elements of the GBSD Deployment Construction: The proposed action at Malmstrom AFB includes construction activities at the MAFs and LFs and the establishment of new utility corridors and communication towers within the missile field (**Figure 2**). Two workforce hub and centralized laydown areas would be temporarily established to help support the off-base construction activities. The number of personnel would likely remain unchanged throughout the missile field, and the level of missile maintenance activities would remain similar to, but slightly less than, existing conditions.

MAF Demolition and Reconstruction, and LF Reconstruction. The project includes demolition, reconstruction, and construction necessary to transition between eight and 15 MAFs and all 150 LFs throughout the Malmstrom AFB missile field to completely refurbished condition. Other than the individual locations, the construction activities at individual MAFs and LFs, the work crew size, work schedule, number and type of laydown areas, construction of CSBs and LCs, and deployment of the GBSD weapon system would be the same as outlined for F.E. Warren AFB in the original Opinion.

Utility Corridors and Communication Towers. The project includes establishing approximately 1,277 miles of new utility corridors for which the government would acquire the necessary property easements and ROWs, and the potential to conduct activities within the 1,750 miles of existing utility corridors and ROWs, and easements throughout the Malmstrom AFB missile field. In addition, the project includes establishing 31 communication towers on newly acquired property throughout the missile field. The towers would be 300 ft tall with guy wires and lighted in accordance with FAA requirements. Other than location, the utility corridor and communication tower elements would be the same as described in the original Opinion for F.E. Warren AFB.

Workforce Hubs and Laydown Areas. Two workforce hubs containing living quarters, a cafeteria, a central medical facility, training areas, a central transport facility, construction offices, and utility service areas would be would be established in or near Great Falls and Lewiston, MT. Eight construction laydown areas would be established in or near Augusta, Belt, Denton, Judith Gap, Lewistown, Stanford, Vaughn, and Winfred, MT.

Each workforce hub would be 50 to 60 acres and typically house 2,000 construction workers and support personnel during the construction phase of the proposed action, with as many as 3,000 individuals during peak periods. The workforce hubs would provide primarily barracks-style modular housing for the workers in the missile field and include food services, recreational facilities, and support services staff quarters. They would also contain an administrative and training area and substantial parking facilities. The hubs would be fully self-supporting with its own water, wastewater treatment, and other utilities and would remain in place for 2–5 years during construction. Upon completion of the off-base elements of the project, the site of the workforce hubs would be returned to the condition agreed upon with local stakeholders. Common areas would be transferred to the community, or the hubs would be removed, and disturbed areas would be reseeded and restored, as appropriate.

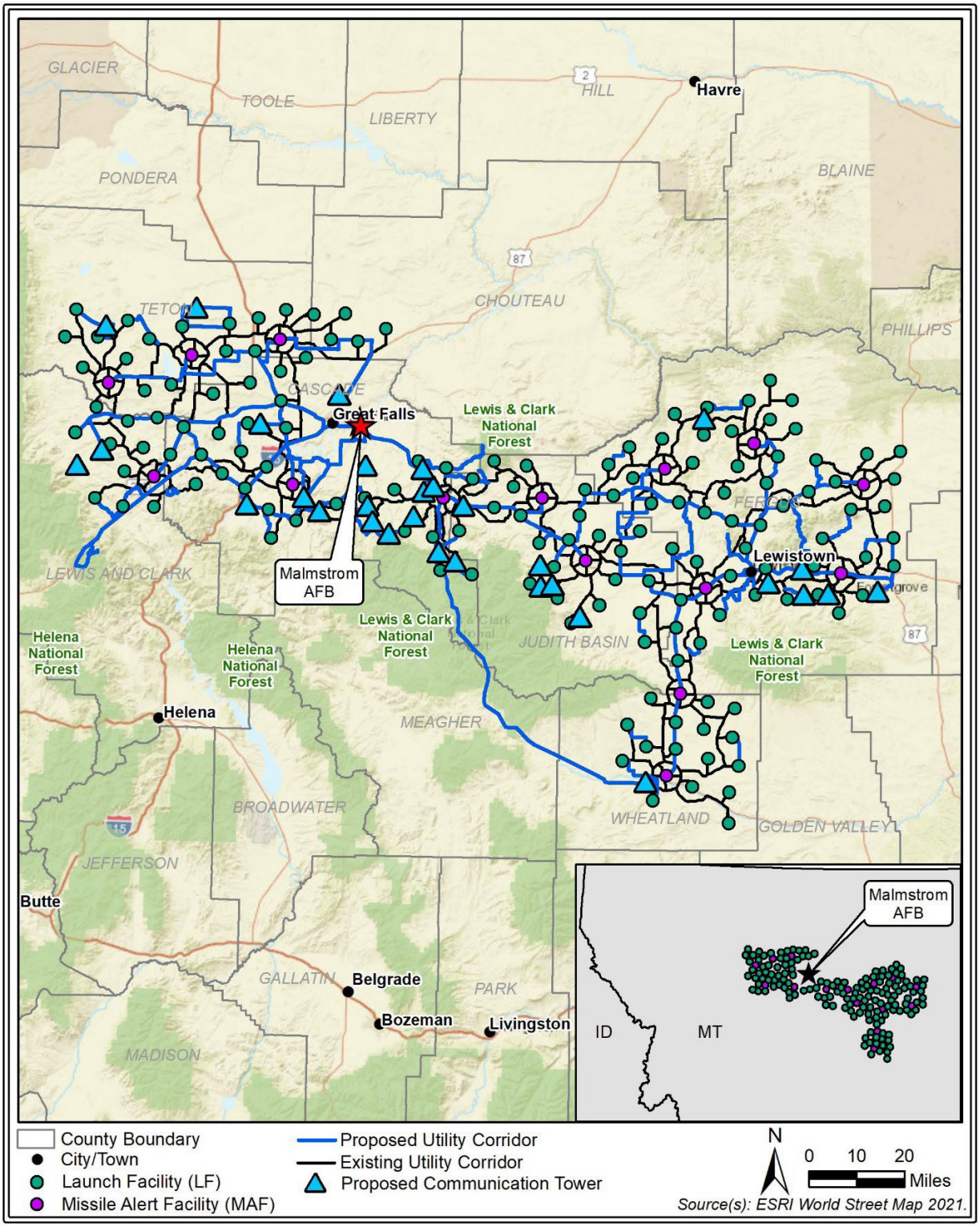


Figure 2. Off-Base Elements of the GBSD Deployment for Malmstrom AFB

Because of the limited amount of on-site material storage area at sites throughout the missile field, temporary laydown areas would be established for storing bulk materials and equipment to support construction. Each laydown area would be approximately 10–15 acres near highways and other access roads and strategically located to minimize travel times to and from construction sites throughout the missile field. Each area would contain a warehouseman office, a satellite medical area, indoor controlled and outdoor material staging areas, a heavy equipment maintenance area, light-duty equipment and demolition material staging areas, a water distribution well for the construction sites, a fuel distribution area, and a construction component preassembly area. Unlike F.E. Warren AFB, there is currently no local supply of concrete sufficient to support the off-base construction; therefore, mobile concrete batch plants are anticipated at the laydown areas in Augusta, MT; Winfred, MT; Judith Gap, MT; Belt, MT. These would be small mobile batch plants that would generate two to three batches (i.e., truck loads) per day on average.

To refine the siting of the workforce hub and laydown areas, the following selection guidelines would be implemented:

- The USAF and any contractors would coordinate with city and county officials before selecting sites for the temporary facilities and obtain permits as necessary to meet all local zoning requirements.
- The temporary workforce hub and laydown areas would be in full compliance with local planning requirements and plans.
- The temporary workforce hub and laydown areas would not be sited in areas supporting sensitive resources.
- Temporary workforce hub and laydown area staffs would prepare and maintain site-specific public Health and Safety Plans that outline policies and protocols for complying with all applicable health and safety requirements, reducing vehicle accidents, and ensuring the safe and orderly functioning of the facility.
- Public health and safety briefings would be conducted as part of the hiring process and periodically conducted as part of the daily safety briefings.
- Temporary workforce hub and laydown area staffs would prepare and maintain written security policies and protocols, which would include hiring of on-site security personnel and direct communication with local law enforcement, as necessary.
- Screen potential employees for violent crimes or sexual offences convictions.
- Temporary workforce hub and laydown area staffs and occupants would comply with all local ordinances (e.g., noise).
- Following the GBSD deployment construction phase and in coordination with the local cities and towns, workforce hub and laydown areas would be closed, removed, and restored once they are no longer needed.
- The workforce hub would be established in accordance with Occupational Safety and Health Standards (Title 29 of the *Code of Federal Regulations* [CFR] § 1910.142, *Temporary Labor Camps*).

In addition, the workforce hub and laydown areas would meet the following requirements, wherever possible. Temporary workforce hub and laydown areas:

- Would not be collocated with or adjacent to residential neighborhoods, schools, churches, parks, historic buildings or sites, or other sensitive viewing areas.
- Would be located to provide direct access to major highways and primary roadways

suitable for the additional construction traffic, and traffic routes would be established, as necessary, to avoid downtown areas.

- Would be sited near or adjacent to existing utility infrastructure (e.g., water, sewer, waste, power, and communication systems), if practical, and in alignment with other selection guidelines.
- Would include sanitary support infrastructure that would meet all local, county, and state regulations.

Operations: The level and nature of operations and maintenance activity supporting the GBSD program throughout the missile field would be similar to, but somewhat less than, those supporting the MMIII program. Maintenance of the GBSD weapon system would comprise standard USAF logistics structure, directives, and procedures focused on normal supply and repair activities to sustain alert readiness. The level of activity to replace, remanufacture, repair, rebuild, and upgrade GBSD missiles and supporting systems during their service life would be similar to the level of activity for the MMIII systems, MAFs, and LFs. The GBSD modular design, however, would allow component replacements, as necessary, during maintenance activities, thereby, reducing or eliminating time and effort required in the field. All transport vehicles (e.g., PTs, TEs, and missile transporters) would be upgraded or replaced to be compatible with the heavier GBSD system. The new vehicles would be similar in size and function to the existing fleet vehicles, possibly with minor differences in length, height, and overall weight. All vehicles would be configured and permitted as necessary to meet all on-road requirements.

MMIII Decommissioning and Disposal: Decommissioning and disposal of each missile would include removing the missile from the LF, transporting it to the base for temporary storage, and preparing it for transport to Hill AFB, UTTR, Camp Navajo, or a contractor facility. Decommissioning and disposal of facilities would include removing MMIII-related technology and support equipment from the MAFs and LFs; transporting the material(s) to the base; and sorting, declassifying, and disposing of them based on standardized protocols.

Biological Conservation Measures

The following general conservation measures are actions that would be implemented during project design (i.e., site selection), construction, operations, or maintenance activities as applicable to avoid or minimize effects of the project on resources. The level of effects presented in the BA incorporates the implementation of these measures and their minimizing effects on consequences to federally listed species and critical habitat. These measures are general in nature and would avoid or minimize adverse effects on all biological resources; the conservation measures that have been developed for specific ESA-listed species are presented after the general biological conservation measures.

- Refine the siting of the utility corridors throughout the missile field using the following selection guidelines during final design:
  - Locate utility corridors within or along existing utility easements and corridors or previously disturbed areas wherever possible.
  - Site utility corridors located along existing roadways in accordance with state and

county department of transportation (DOT) requirements and sound engineering practice.
  - Site utility corridors located along existing roadways as close to the roads as possible without undermining their structural integrity.
  - Site utility corridors that are not able to be located along existing roadways along the most practicable path to minimize effects on public and private property and sensitive resources in the area.
  - If sensitive resources are identified near potential sites, the USAF would consider actions to avoid or minimize adverse effects to the maximum extent practicable. Actual ground disturbance would be dependent upon final designs and could be approximately 25 percent of that reported here for the following reasons: sensitive resources would be avoided where feasible, with communication towers and construction easements cited to avoid sensitive resources, and the temporary construction easement for the utility corridor would be reduced from 100 to 25 feet in the vicinity of sensitive resources.
- Refine the siting of the temporary workforce hub and laydown areas using the following selection guidelines during final design:
  - The USAF and any contractors would coordinate with city and county officials before selecting sites for the temporary facilities and obtain permits as necessary to meet all local zoning requirements.
  - The temporary workforce hub and laydown areas would be sited in full compliance with local planning requirements and plans.
  - The temporary workforce hub and laydown areas would not be sited in areas supporting sensitive resources (e.g., sensitive wildlife habitat, culturally sensitive resources, or wetlands). Instead, they would be sited in previously disturbed areas whenever possible.
  - Temporary workforce hub and laydown area staffs would prepare and maintain site-specific public Health and Safety Plans (HASPs) that outline policies and protocols for complying with all applicable health and safety requirements, reducing vehicle accidents, and ensuring the safe and orderly functioning of the facility.
  - Public health and safety briefings would be conducted as part of the hiring process and periodically conducted as part of the daily safety briefings.
  - Temporary workforce hub and laydown area staffs would prepare and maintain written security policies and protocols, which would include hiring of on-site security personnel and direct communication with local law enforcement, as necessary.
  - The USAF and any contractors would screen potential employees for violent crimes or sexual offences convictions.
  - Temporary workforce hub and laydown area staffs and occupants would comply with all local ordinances (e.g., noise).
  - Following the GBSD deployment construction phase and in coordination with the local cities and towns, workforce hub and laydown areas would be repurposed, closed, removed, and restored once they are no longer needed.
  - The workforce hub would be established in accordance with Occupational Safety and Health Standards (29 CFR § 1910.142, Temporary Labor Camps).
- The temporary workforce hub and laydown areas would meet the following requirements, wherever feasible:

  - Would not be collocated, where feasible, with or adjacent to residential neighborhoods, schools, churches, parks, historic buildings or sites, or other sensitive viewing areas.
  - Would be located to provide access to major highways and primary roadways suitable for the additional construction traffic, and traffic routes would be established, as necessary, to avoid downtown areas.
  - Would be sited near or adjacent to existing utility infrastructure (e.g., water, sewer, waste, power, and communication systems), if practical, and in alignment with other selection guidelines.
  - Would include sanitary support infrastructure that would meet all local, county, and state regulations.
- The USAF would comply with all applicable Bureau of Land Management (BLM) Resource Management Plans (RMPs) (as amended) design criteria, Best Management Practices (BMPs), and mitigation requirements on BLM-managed lands.
- The USAF would comply with all applicable Forest Plan Standards and Guidelines (as amended), BMPs, and mitigation requirements on National Forest System (NFS) lands. Ground-disturbing and vegetation management activities would comply with all Agency-wide, regional, and state BMPs.
- The USAF would comply with all Agency-wide, regional, and state BMPs regarding ground-disturbing and vegetation management activities.
- All construction and reclamation activities would be monitored by inspectors approved by the applicable land management agencies, and in accordance with the mitigation and monitoring plan developed by the USAF and/or their contractor.
- The USAF would provide project crews and contractors with maps showing avoidance areas; these maps would include work zones as well as ROW areas where overland travel would be avoided.
- The USAF would segregate and store separately from the subsoil layer all topsoil that is required to be temporarily removed during construction (e.g., soil removed from the utility trench line).
- Replace all topsoil and sub-surface soils that were temporarily removed and stored during the construction process in the proper order during reclamation (i.e., subsoil in the bottom of the trench/disturbance-area and topsoil on top).
- During restoration, spread and return stored soils (subsurface soils or waste rock resulting from excavations or foundation drilling) in proximity to where the material was originally removed.
- Re-contour temporarily disturbed areas to blend with the surrounding landscape. Re-contouring would emphasize restoration of the existing drainage patterns and landform to pre-construction conditions to the maximum extent feasible.
- Decompact soils that have become compacted during construction on a case-by-case basis using techniques and methods developed through negotiation with the landowner or land management agency.
- Conduct final cleanup of all construction areas to ensure that all areas are free of any construction debris, including, but not limited to: assembly of scrap metals, oil or other petroleum-based liquids, construction wood debris, and worker-generated litter. Permanent erosion control devices would be left in place during final cleanup.
- Adhere to specific Federal and state closure periods and areas during operations and

maintenance (O&M) activities; do not conduct any routine and corrective O&M activities during these timeframes to the maximum extent feasible (i.e., as reasonable while still maintaining project functionality and national security). The appropriate Federal or state agency would notify the USAF of any spatial or temporal restrictions that are in effect for the Project area during operation (e.g., fire restrictions) as applicable.

- Clean all earthwork equipment before arriving at the site to begin construction, operations, or maintenance activities. Clean tracks, skid plates, and other parts that can trap soil and debris at its previous off-site location.
- During operation of the Project, the USAF or its subcontractors would use existing stream crossings or new, permanent crossings that were approved as part of the Project and would not create additional crossings without prior agency permitting and approval.
- Conduct preconstruction surveys to identify sensitive biological resources as necessary, including wetlands, federal- and state-listed and proposed species, and avian nests. If sensitive biological resources are identified during surveys, actions to avoid or minimize effects on those resources would be implemented.
- Follow Federal and state guidelines for conducting preconstruction surveys in areas determined to be occupied by or to contain habitat for sensitive biological resources and take precautions to avoid or minimize effects on the resources to the maximum extent feasible. This includes pre-disturbance botanical surveys for species of conservation concern for the Helena-Lewis & Clark National Forest, per USFS direction.
- Consider all wildlife and plant surveys as “casual use” activities that would not be restricted or prevented from occurring due to overlapping season and temporal restrictions that apply to other activities (e.g., temporal restrictions on ground disturbance).
- Limit the footprint of project activities to the minimum necessary to safely construct and implement the project while minimizing the extent of vegetation that is required to be cleared. Minimize the removal of native vegetation during construction consistent with safe construction practices. Cutting shrubs at or near ground level (leaving root structures in place) to facilitate regrowth after construction.
- Use directional drilling where feasible to install utility lines beneath stream, wetlands, riparian areas, and other sensitive resources or reroute or microsite the project element to avoid the sensitive resources.
- Minimize adverse effects on sensitive biological resources to the maximum extent feasible when siting easements for temporary storage of construction materials and equipment at MAFs, LFs, utility corridors, communication towers, workforce hubs, and laydown areas by siting them in previously disturbed areas whenever possible.
- Locate new access roads to minimize the number of trees removed during construction. However, new access roads would not be relocated if the change would result in an increase in the overall disturbance (acres); require additional cut-and-fill activities; or impact other sensitive resources (e.g., sagebrush plant community, sensitive species habitat, and/or cultural resources or viewshed) if the road was moved.
- Maintain snags in place along the outer portions of each utility line's right-of-way in order to reduce the impacts on habitat for cavity nesters, where retention of these snags would not conflict with the safe implementation of the project.
- Use soil amendments (e.g., fertilizer, wood or straw mulches, tackifying agents, or soil-stabilizing emulsions) on a case-by-case basis and in compliance with the land management agency’s or landowner’s approval. Use only soil amendments that are non-

toxic to biological resources and are certified to be weed free.

- Environmental Construction Inspectors would approve weed-free straw or other erosion control materials on federally managed lands prior to application.
- Limit management of woody vegetation within 50 ft of streams to mechanical techniques implemented by hand crews.
- Conduct preconstruction noxious weed surveys of areas to be directly affected by the Project, excluding under active agricultural cultivation and military installations. The purpose of these surveys is to document the presence and abundance of existing noxious weeds prior to disturbance and establish the success criteria that will be used to determine when post-construction noxious weed management activities have returned an area to preconstruction conditions related to noxious weed cover.
- Conduct preconstruction weed treatment in project areas identified as containing a high density of noxious weeds, as outlined in the weed management plan. Conduct these treatments prior to the start of ground-disturbing activities and at the time most appropriate for the target species in areas identified. Limit preconstruction weed treatment to the areas that are expected to have surface-disturbing activities. Preconstruction treatment may use mechanical control, hand spraying, grazing, or herbicides methods.
- If herbicides are required for weed control, comply with label restrictions; Federal, state and/or county regulations; as well as landowner agreements related to herbicide use/applications. No spraying would occur prior to notification of the applicable land management agency or landowner. On Federal or state-controlled lands, an herbicide use plan would be submitted prior to any herbicide application as recommended in the BLM herbicide EIS (https://www.blm.gov/programs/natural-resources/weeds-and-invasives/vegetative-peis). The herbicide use plan would include the dates and locations of application, target species, herbicide, adjuvants, and application rates and methods (e.g., spot spray vs. boom spray).
- If herbicides are required for weed control, select appropriate herbicides or other chemical weed controls from the Federal, state or county's list of previously approved herbicides and in accordance with any herbicide plans. If an applicable land managing agency determines that a previously approved herbicide and/or plan is unacceptable, they would notify the USAF.
- If herbicides are required for weed control, use only herbicides approved by the land managing agency as safe to use in aquatic environments and reviewed by the USAF or their subcontractors for effectiveness within 100 feet of sensitive aquatic resources.
- Do not place soil stockpiles from areas that did not have noxious weeds or invasive species present adjacent to populations of noxious weeds or invasive species. Soil stockpiles in areas containing noxious weeds and invasive plant species would be kept separate from soil removed from areas that are free of noxious weed and invasive plant species, and the soil would be replaced in or near the original excavation. If requested by the applicable land-management agency, soil stockpiles would be covered with plastic if the soil stockpile would be in place for two weeks or more and is not being actively used.
- Keep project-related storage and staging yards weed-free.
- Source straw or hay that are used to control erosion and sedimentation from certified weed-free sources.
- Rehabilitate temporarily disturbed areas as soon as feasible, following ground-disturbing activities, to preconstruction conditions. Seed mixes for revegetation would be developed

and agreed to through coordination with the local office of each appropriate local land management agency (e.g., USFS and BLM), state land management agency, or landowner as applicable. Seed mixes would be certified "noxious weed free". Planted species used in the revegetation efforts should match the native species composition present in and around the site to the extent possible. At rangeland/grassland sites, seed mixes should include at least three to four grass species, targeted to the specific site. In riparian areas, the planting of willows and/or cottonwoods (if site appropriate) may be used to replace woody cover; deciduous shrubs such as currant, chokecherry, native plum, wild rose, and buffaloberry may also be considered.

- Work with land managers as well as state and local county weed departments to develop and implement a plan to assess, treat, and monitor for weeds. Conduct annual post-construction monitoring and treatment of invasive plants on closed roads (access roads dedicated for use by the Project only), temporary roads, laydown yards, and other disturbed areas for 3 years in areas where infestations or populations of noxious weeds have been identified. If after 3 years post-construction conditions are not equivalent to or better than preconstruction conditions (in accordance with applicable permit), monitoring and treatment would continue until these conditions are met. However, if adjacent unaffected land uses (i.e., uses not related to the Project) are significantly contributing to the introduction and/or persistence of invasive plant species within areas initially disturbed by the Project, then the USAF would not be required to treat noxious weeds in these areas.
- Consult with the appropriate land management agency to determine the appropriate species of tree seedlings to be planted on Federal or state lands, if the planting of tree seedlings are required by the Federal or state agencies.
- Conduct a delineation of wetlands and waters of the U.S. prior to construction to support Clean Water Act (CWA) Section 404 and 401 permitting and to minimize potential effects.
- Avoid impacts on wetland and riparian areas unless physically or economically infeasible or where activities are permitted. Land management agencies' plans (e.g., RMPs, Forest Plans, etc.) that have standards, guidelines, stipulations, or avoidance buffers for wetlands would be adhered to on applicable lands.
- Submit site-specific plans and measures to mitigate impacts on wetlands and waters of the U.S. to the appropriate regulatory agency, as well as the land managing agency in instances where impacts on wetlands and waters of the U.S. are not avoidable. The USAF would obtain necessary permits prior to discharging dredged or fill material to waters of the U.S. and state.
- Submit a mitigation plan that is accepted by the U.S. Army Corps of Engineers (USACE), if required to meet USACE requirements for CWA Section 404 permitting.
- Obtain from the U.S. Environmental Protection Agency (EPA) or its designees the appropriate National Pollutant Discharge Elimination System (NPDES) permits for construction activities as required.
- Designate one or more responsible and qualified staff to manage stormwater issues, conducting the required stormwater inspections, and maintaining the appropriate records to document compliance with the terms of the Stormwater Pollution Prevention Plan (SWPPP) and NPDES permits.
- Implement the conditions in the SWPPP to minimize impacts on wetlands and waterbodies, including:
  - Install and maintain approved sediment and erosion control BMPs until disturbed areas

meet final stabilization criteria.
  - Implement and install temporary BMPs to control erosion and sediment at staging areas (equipment storage yards, lay down areas).
  - Repair damaged temporary erosion and sediment control structures in accordance with the SWPPP.
  - Maintain stormwater BMPs on all disturbed lands during construction activities.
  - Upon completion of construction, install permanent erosion and sediment BMPs within the ROW and at related facilities.
  - The SWPPPs would be modified as necessary to account for changing construction conditions.
- Develop and implementing a Project Spill Prevention and RMP for the Project.
- On Federal lands, the USAF or its subcontractors would consult with appropriate land management agency staff prior to siting and designing stream crossings (e.g., location, alignment, and approach for culvert, drive-through, and ford crossings). This may include a hydrologist, an engineer, and (for perennial and many intermittent streams) an aquatic biologist.
- If culverts are required for Project related road crossings of wetlands or waterbodies containing aquatic resources, culverts would include fish passage stipulations, such as: culverts would not be hydraulically controlled, which could create passage problems for aquatic organisms. Culvert slope would not exceed stream gradient and would be designed and implemented (typically by partial burial in the streambed) to maintain streambed material in the culvert.
- If culverts are required for Project related road crossings of wetlands or waterbodies, all culverts on BLM management lands would be designed to meet BLM Gold Book standards (Surface Operating Standards and Guidelines for Oil and Gas Exploration Development).
- If culverts are required for Project related road crossings of wetlands or waterbodies, all culverts on NFS lands would be designed and installed to meet desired conditions for riparian and aquatic species as identified in the applicable Forest Plan.
- On non-federal lands, if culverts are required for Project-related road crossings of wetlands or waterbodies then their placement would comply with state BMPs.
- Determine the most appropriate preparation and installation methods for utilities at wetland and waterbody crossings on a case-by-case basis in coordination with the USACE and the states through the CWA Section 404 and 401 permitting processes.
- Use secondary containment systems of an appropriate size to prevent spills, for pumps operating or stored/staged and fuel and oil storage and refueling activities located, within 100 feet of a wetland or waterbody.
- Limit instream work for coldwater, coolwater, and warmwater fisheries to the following timeframes to minimize impact to spawning and migration activities, unless otherwise permitted or restricted by Federal or state authorities. These time restrictions apply to both construction and operation/maintenance activities, except for the installation and removal of equipment bridges:
  - Coldwater fisheries - June 1 through September 30
  - Coolwater and warmwater fisheries - June 1 through November 30
- Maintain adequate waterbody flow rates to protect aquatic life and preserve existing downstream uses during construction across streams and waterbodies.
- Cross waterbodies using standard upland construction techniques when they are dry or

frozen and not flowing, provided that the Environmental Construction Inspectors verifies that water is unlikely to flow between initial disturbance and final stabilization of the feature. In the event of perceptible flow, construction techniques appropriate for waterbody crossings must be used (see the additional mitigation measure requirements for a description of the appropriate waterbody crossing techniques).

- Use sediment barriers during construction across streams and waterbodies to prevent the flow of spoil or silt-laden water into any waterbody.
- Prior to bridge installation, only cross waterbodies with equipment necessary for installation of equipment bridges. Limit the number of such crossings and equipment allowed to the minimum number required to safely construct the bridge.
- Construct and maintain equipment bridges to allow unrestricted flow and to prevent soil from entering the waterbody during construction across streams and waterbodies. Design and maintain each equipment bridge to withstand and pass the highest flow expected to occur while the bridge is in place. Remove temporary equipment bridges as soon as practicable.
- Implement the following during dam-and-pump crossings of streams and waterbodies:
  - Use sufficient pumps, including on-site backup pumps, to maintain downstream flows.
  - Construct dams with materials that prevent sediment and other pollutants from entering the waterbody (e.g., sandbags or clean gravel with plastic liner).
  - Screen pump intakes to minimize entrainment of fish.
  - Prevent streambed scour at pump discharge; and,
  - Continuously monitor the dam and pumps to ensure proper operation throughout the waterbody crossing.
- Implement the following during flume crossings of streams and waterbodies:
  - Install flume pipe before any trenching.
  - Use sandbags, or sandbag and plastic sheeting diversion structure or equivalent to develop an effective seal and to divert stream flow through the flume pipe (note that some modifications to the stream bottom may be required to achieve an effective seal).
  - Properly align flume pipe(s) to prevent bank erosion and streambed scour.
  - Do not remove flume pipe during trenching, or backfilling activities, or initial streambed restoration efforts; and,
  - Remove all flume pipes and dams that are not also part of the equipment bridge as soon as final cleanup of the stream bed and bank is complete.
- Adhere to the following restrictions for open-cut crossing methods:
  - Complete instream construction activities (including trenching, utility installation, backfill, and restoration of the streambed contours) within 24 hours for minor waterbodies and 48 hours for intermediate waterbodies, unless site-specific conditions make completion within 48 hours infeasible. Streambanks and unconsolidated streambeds may require additional restoration after this period.
  - Limit use of equipment operating in the waterbody to that needed to construct the crossing. All other construction equipment must cross on an equipment bridge. Equipment bridges are not required at minor waterbodies that do not have a state-designated fishery classification or protected status (e.g., agricultural or intermittent drainage ditches).
- Prepare a plan for each waterbody or wetland that would be crossed using the horizontal directional drilling method, for review by applicable state and Federal agencies. The plan

would include:

  - Site-specific construction diagrams that show the location of mud pits, pipe assembly areas, and all areas to be disturbed or cleared for construction.
  - Justification that disturbed areas are limited to the minimum needed to construct the crossing.
  - Identification of any aboveground disturbance or clearing between the horizontal directional drilling entry and exit workspaces during construction.
  - A description of how an inadvertent release of drilling mud would be contained and cleaned up; and
  - A contingency plan for crossing the waterbody or wetland in the event the horizontal directional drilling is unsuccessful and how the abandoned drill hole would be sealed, if necessary.
- During construction across streams and waterbodies, install sediment barriers immediately after initial disturbance of the waterbody or adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (e.g., after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete.
- Do not store hazardous materials, including chemicals, fuels, and lubricating oils, within 100 feet of a wetland, waterbody, or designated municipal watershed area, unless the location is designated for that use by an appropriate governmental authority. This restriction applies to storage of these materials and does not apply to normal operation or use of equipment in these areas.
- Follow Federal and state-specific guidelines for minimizing effects on wildlife from open trenches.
- Notify the appropriate agencies if special status wildlife species are killed or injured as a result of project activities.
- Conduct a worker training program that informs workers and project personnel of the importance of adhering to all Project environmental management actions and mitigation measures for biological resources. This includes making all on-site personnel aware that most avian species are protected by Federal and state laws; of USFWS-sanctioned grizzly bear hazing guidelines to reduce the likelihood of conflict, including potential injury or mortality (USFWS 2020b); that any project-related wildlife mortalities must be reported to the applicable agencies; and the importance of maintaining all project disturbances within designated areas and outside of avoidance buffers.
- Implement applicable measures from the Recommended Best Practices for Communication Tower Design, Siting, Construction, Maintenance, and Decommissioning prepared by the USFWS Migratory Bird Program (USFWS 2021), including:
  - Avoiding construction activities during the avian breeding season.
  - Conducting preconstruction avian surveys in areas where construction disturbances would occur.
  - Construct towers under 200 feet tall without supplemental lighting.
  - Limiting the amount of pilot warning and obstruction avoidance lighting used on a communication tower to the minimum required by the Federal Aviation Administration (FAA) for safe operation of the tower.
  - Using only flashing lights on the communication towers rather than non-flashing lights.
  - Using motion or heat-sensitive down-shielded ground security lighting where

applicable/needed to decrease adverse effects on migratory birds.
  - Co-locate towers with existing development when feasible. When siting towers, avoid habitat features that congregate wildlife to the extent practical, such as water resources, habitat edges, and high-use movement areas.
- Construct self-supporting structures that do not require guy wires. If guy wires must be used, attach bird deterrent devices along the guy wires in accordance with USFWS MBTA guidance to minimize avian collisions with Project structures. Maintain these bird deterrent devices during operation of the Project.
- Install and maintain perch-deterrent devices to reduce raptor and raven predation pressures on special status species found at or near the following communication towers: Communication Tower #3 and #13 associated with F.E. Warren, which are located next to or within plains sharp-tailed grouse production areas. Production areas include 90 percent of sharp-tailed grouse nesting or brood-rearing habitat, mapped as a buffer zone of 1.25 miles around active leks within its Colorado range.
- Implement seasonal timing restrictions for activities that occur in big game winter range as determined by the applicable state wildlife agencies.
- Conduct all vegetation clearing outside of the avian breeding season (generally April 15–August 1, depending on local conditions and Federal land management plan requirements) in order to minimize impacts on migratory birds to the maximum extent feasible. Where this is not feasible, conduct preconstruction surveys within the disturbance footprint within seven days prior to clearing. If an active nest (containing eggs or young) of a bird species protected under the Migratory Bird Treaty Act (MBTA) is found during either pre-construction surveys or construction activities, the nest would be identified to species, inconspicuously marked, and left in place until any young have fledged before the vegetation is removed. An appropriate site-specific buffer for detected species would be developed considering the type of disturbance, the habitat in which the disturbance occurs, and the species' general tolerance for human activity, which varies by species.
- Limit vehicular speeds during construction and operations to 25 miles per hour on all unsurfaced access roads.
- Construct new aboveground utilities, if required for the project, in accordance with Avian Power Line Interaction Committee guidelines.
- Prior to demolition activities of existing buildings, conduct visual surveys for bats roosting or hibernating on or within the building. If bats are observed, the USAF would alert the appropriate state and Federal agency to determine the appropriate next steps (which are expected to be depended on which species of bat is detected and what that species listing status is at the time of detection).
- An inspector would accompany the Construction Contractor site engineers during the final engineering design or prior to ground-disturbing activities to verify and flag the location of any known occupied wildlife structures (e.g., nests, burrows, colonies) utilized by sensitive wildlife species or locations of sensitive plant species (e.g., listed plants) that could be impacted by the project based on the indicative engineering design. The final engineering design would be “micro sited” (e.g., routed) to avoid direct impact to these occupied structures to the maximum extent feasible within engineering standards and constraints.
- In the event any sensitive plants (e.g., listed plants) or federally protected wildlife species (e.g., raptor nests) require relocation, permission would be obtained from the applicable Federal or state agency. If avoidance or relocation of a listed plant is not feasible, the

topsoil surrounding the plants would be salvaged, stored separately from subsoil, and respread during the restoration process.

- Adhere to the conservation measures developed by the USFWS for ESA-listed species during Section 7 consultation.
- In the event that an ESA-listed species not covered by this Opinion is discovered during surveys, the USAF will cease construction, and notify the USFWS requesting to reinitiate this Section 7 consultation.

Action Area

The overall action area for the GBSD project is shown in Figure 2. The action area for the proposed action is defined as all locales that might be affected directly or indirectly by the proposed action and is not merely the immediate area involved in the action (50 CFR § 402.20). The Malmstrom action area for this Amendment is limited to Malmstrom AFB and Malmstrom AFB missile field in Montana. The action area encompasses the geographic extent of environmental changes (i.e., physical, chemical, and biotic effects) that would result directly and indirectly from the action (**Figure 3**). The action area, therefore, includes the spatial extent of all direct, indirect, interrelated, and interdependent effects from all the project elements. These effects include the spatial footprint for human- caused stressors such as disturbance as a result of human presence, human activity (which includes both human presence plus presence of vehicles, and other machines or materials), or from noise or light from construction activities. A spatial buffer has been included as part of the action area to account for noise propagation or lighting exposure where known.

The action area includes a 1,600-ft (0.3-mile) buffer for on-base construction, off-base construction within city limits, and portions of the existing and proposed utility corridors that would be collocated with state and interstate highways; and a 5,000-ft (1.0-mile) buffer in all other areas. The buffers established are based on the anticipated extent of potential noise as these effects are expected to have the largest spatial extent from the project of any project-related effect.

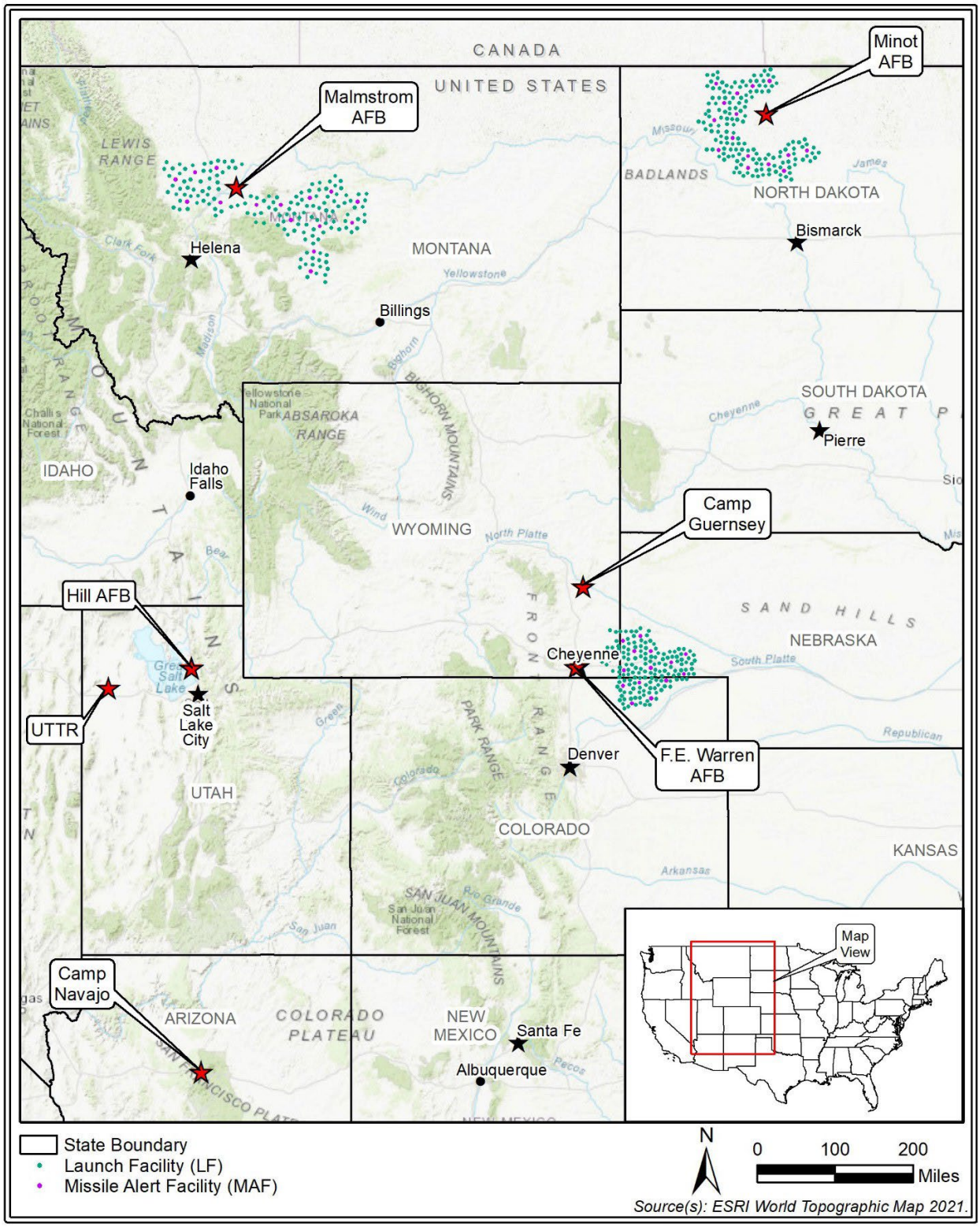


Figure 3. GBSD Action Area - Deployment and Support Locations

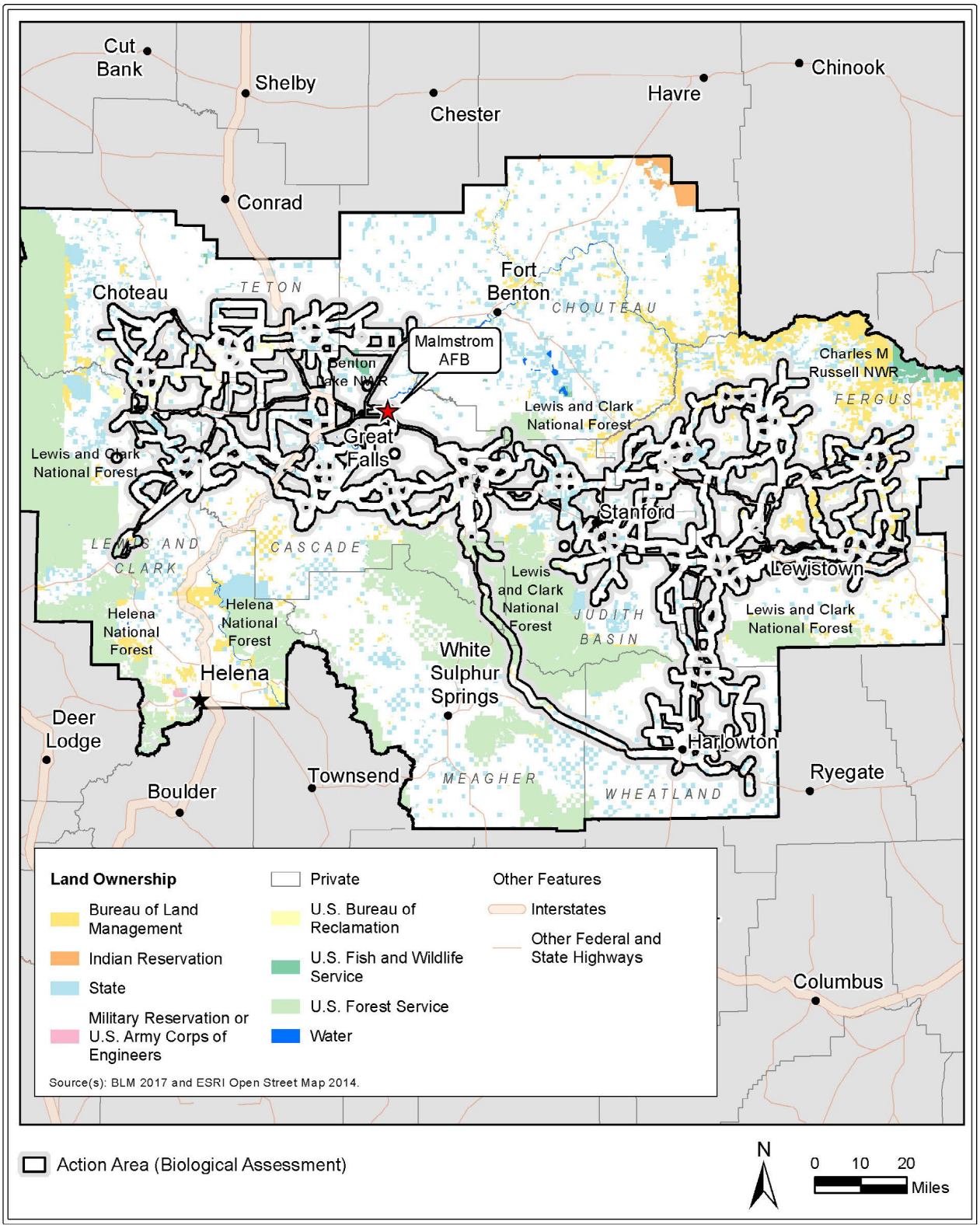


Figure 4. Malmstrom AFB Portion of the Action Area

Status of the Species

The WBP is a five-needle pine that lives in windy, cold, high-elevation or high-latitude environments across the western United States and southern Canada. The WBP pine has a broad range both latitudinally, occurring from a southern extent of approximately 36° north in California to 55° north latitude in British Columbia, Canada, and longitudinally, occurring from approximately 128° in British Columbia, Canada to an eastern extent of 108° west in Wyoming. It also occurs in scattered areas of the warm and dry Great Basin. As a result, many stands are geographically isolated as documented by Arno and Hoff (1989).

There are four stages in the life cycle of the WBP: seed, seedling, sapling and mature trees, also referred to as reproductive adults. Seeds are produced in female cones and once on the ground may take two years or more, up to 11 years in some cases, to germinate. Germinated seeds become seedlings that are between 3 to 4 inches tall with a taproot that can measure between 5 to 7 inches, with 7 to 9 cotyledons, also known as the embryonic first leaves, as documented by Arno and Hoff (1990). WBP seedlings may persist for multiple years, depending on growing conditions, until reaching the sapling stage of the life cycle. WBP saplings persist for few to many years, depending on growing conditions, until they produce male and female cones. Mature reproductive WBPs contain both female and male cones, which is known as monoecious reproduction, and can survive on the landscape for hundreds of years. This slow-growing long-lived tree has a life span between 500 years and 1,000 years (Arno and Hoff 1989; Perkins and Swetnam 1996), provided it is located in an area with lower competition, such as a more open canopy with low litter depth and high rock cover (Maloney 2014). Mature WBP trees require a more open canopy, dispersal of seeds by Clark's nutcracker, two summers of suitable temperatures and precipitation for pollinated cones to mature, as well as levels of nitrogen and phosphorus that are adequate to restore values after being depleted in masting years (USFWS 2021a).

Major threats to WBP include mortality from disease that is caused by the non-native white pine blister rust and predation by the native mountain pine beetle. This species also faces major threats from climate change, habitat loss from past and ongoing fire suppression activities, and the combined negative effects of these individual threats. As a result of these threats, scientists estimate that as of 2016, 51 percent of all standing WBP trees are dead.

Environmental Baseline

Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects in the action area that have undergone section 7 consultation, and the impacts of State and private actions which are contemporaneous with the consultation in progress. As stated above, the Environmental Baseline is only described where effects of the action may impact the WBP.

The action area overlaps the range of whitebark pine at locations in the central and far western portions of the Malmstrom Area (USAF 2022). Surveys of the action area for whitebark pine are incomplete. Approximately 138 acres of the action area were surveyed for whitebark pine and

none were found (USAF 2022) in those areas. Through desktop analysis (USAF 2022), the USAF identified approximately 1,453 acres of overlap between areas of proposed construction (proposed utility corridors, existing utility corridors that may be upgraded, and one communications tower) and the range of whitebark pine. By removing areas below 5,000 ft in elevation (the likely lower elevational limit of the species within the action area), USAF refined this overlap down to approximately 382 acres. We also note that the majority of utility line construction will likely be located within existing disturbed areas (USAF 2022) and that USAF may be able to reduce impacts by up to 75 percent in sensitive areas by reducing the width of temporary construction easements (USAF 2022). Furthermore, utility corridors would be revegetated following construction and could continue to function as whitebark pine habitat. More precise analysis (e.g., exact acreages of occupied habitat or number of individual trees to be affected) is not possible at this time because a majority of the action area has not been surveyed for whitebark pine. However, in a worst case, the Project could impact up to 1,453 acres of whitebark pine habitat and in the most likely case would impact substantially less than 382 acres.

Effects of the Action

In accordance with 50 CFR 402.02, effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of all other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action.

Effects of the action are a reasonable prediction of the likely reaction of, and biological effect to, individuals of a species to the environmental changes brought about by implementation of the chosen proposed action. As with any prediction of a species' response to environmental impacts, there are many uncertainties associated with it. The prediction must be a reasoned prediction that is informed by the best available science, if available. But because scientific literature reports on the results of controlled experiments and purposefully restricts its findings to the conditions and circumstances of the study, its findings can only be used to inform a predicted result from a future proposed action - it cannot determine the outcome with certainty. Therefore, additional information from observations on other species, from other environments and professional judgment from biologists familiar with the species also play a role in arriving at a reasoned prediction.

The USAF determined that the only stressor that would affect the WBP is habitat modification. The Malmstrom portion of the action area is the only portion of the project that could support whitebark pine, as the F.E. Warren, Minot, Hill AFB, or UTTR portions are all outside of the USFWS range for the species. For this assessment, "potential whitebark pine habitat" was defined through a desktop analysis of all high-elevation "conifer forests" or "conifer-hardwood forests" located at sites over 5,000 ft elevation constrained by the official Service range for the species (USGS 2016; USFWS 2021b). Field surveys would be needed to determine suitability of the desktop derived potential habitat.

Effects from On-Base Elements of the GBSD Deployment

Construction: No potential whitebark pine habitat exists in the vicinity of on-base elements at Malmstrom AFB. In addition, on-base elements fall outside of the USFWS range for the species (USFWS 2021b). As a result, construction of on-base elements would have no effect on whitebark pine. Operations and maintenance activities associated with the project at Malmstrom AFB would occur in developed areas outside of the USFWS range for the species. As a result, operation of on-base elements would have no effect on whitebark pine.

Effects from Off-Base Elements of the GBSD Deployment

Construction: The whitebark pine range overlaps five LFs, the area being considered for the proposed and existing utility corridors, and the 5-acre construction area of Communication Tower #15. Of the area being considered for placement of proposed utility corridors, approximately 904 acres (75 miles), intersects whitebark pine range in Cascade, Choteau, Judith Basin, Lewis and Clark, and Meagher counties. Approximately 167 acres (15 miles long by 100 ft wide) of existing utility corridors intersect USFWS whitebark pine range in Cascade and Judith Basin counties (USFWS 2021b). However, the USFWS range includes low-elevation valley bottoms and slopes below the elevational range for whitebark pine in Montana, which is approximately 5,900–9,300 ft (Fryer 2002). As noted above, potential whitebark pine habitat in this assessment does not include elevations below 5,000 ft. Known occurrences of whitebark pine are located near the proposed utility corridor near Roger's Pass in Lewis and Clark County and through the Little Belt Mountains in Cascade, Judith Basin, and Meagher counties (MTNHP 2021). Approximately 342 acres of potential whitebark pine habitat overlaps the area being considered for placement of the proposed utility corridors. Potential whitebark pine habitat also overlaps, approximately 35 acres of existing utility corridors. Proposed utility corridors, however, would predominantly be sited in existing transmission lines rights of way where the clearing of trees has historically occurred. As a result, it is unlikely that mature whitebark pines would be impacted in these areas as mature trees have likely already been removed. However, whitebark pines are post-disturbance pioneers. In canopy openings such as those produced by wildfire, windthrow, or habitat modification such as right-of-way clearing, high numbers of whitebark pine seedlings and sapling may be present.

The Service has developed a Standing Analysis for impacts to WBP. One of the evaluated activities is the maintenance, upgrade, or replacement activities within existing utility corridors. If the utilities can be placed into existing utility corridors and or if new utility corridors are established and less than 125 WBP of any age class are removed, the Service has determined that those minimal impacts would not result in jeopardy to the species. However, since the final location of the utility corridors has not been defined and the number of WBP that may be affected is unknown, the Service is erring on the side of the species and completing an evaluation of the effect to WBP in this Opinion. We anticipate that if new utility corridors are needed, the USAF would survey for WBP and attempt to avoid areas where WBP exists, especially if these areas contain mature trees that are blister rust resistant or WBP that are considered "plus" or "elite".

Potential whitebark pine habitat also overlaps three LFs (approximately 2.5 acres) within Cascade and Judith Basin counties and the 5-acre construction area of Communication Tower #15. No potential habitat exists within the fence line at the LFs because they lack native vegetation and are regularly maintained. In addition, these LFs are located at relatively low elevations compared to the typical elevation for this species in Montana; therefore, it is unlikely that whitebark pine occurs

within the 1-acre temporary easement at the three LFs or the construction site for Communication Tower #15.

Ground disturbance during construction could result in the destruction, trampling, or crushing of seeds and seedlings of whitebark pine, if present. Ground disturbing activities could also increase the potential for soil compaction and/or erosion as well the introduction and spread of noxious weeds and invasive plants, which could degrade habitat. Site clearing and grubbing could result in the removal of seedlings, saplings or mature trees of whitebark pine. Construction could also result in the emissions of fugitive dust which may have short-term effects that reduce productivity of the species. Implementation of conservation measures would minimize the introduction of noxious or invasive species and reduce dust emissions during construction. Therefore, it is anticipated that short-term effects from the introduction of noxious or invasive species and dust emissions associated with construction activities would be minor and discountable.

General conservation measures would be implemented to limit effects on the species, including conducting preconstruction field surveys and minimizing the removal of native vegetation during construction. However, removal of whitebark pine individuals within the Malmstrom portion of the action area would result in short- and long-term adverse effects.

Operations: Once construction is complete and areas temporarily disturbed by those activities, including the MAF and LF construction easements, are reclaimed, no further effects would occur. In addition, operations and maintenance activities associated with proposed off-base elements would occur in developed areas lacking vegetation. Therefore, there would be no habitat modification, and these activities would have no effect on whitebark pine.

Effects from MMIII Decommissioning and Disposal

Decommissioning and disposal activities at Malmstrom AFB would not involve additional ground disturbance. These activities would occur in previously disturbed or developed areas and existing roads would be used for transportation. For these reasons, there would be no effect on whitebark pine from MMIII decommissioning and disposal.

Cumulative Effects

Cumulative effects are those "effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area" considered in this Opinion (50 CFR 402.02). The Service is not aware of any future state, tribal, local, or private actions that are reasonably certain to occur within the Project action area at this time; therefore, no cumulative effects are anticipated.

Conclusion

Regulations direct the Service to evaluate whether a proposed action is likely to jeopardize the continued existence of threatened or endangered species. The continued existence of a listed species depends upon the fate of the populations that comprise them and the continued existence of a population is determined by the fate of individuals that comprise the population. That is, the abundance, reproduction, and distribution of a given species depends upon the collective

performance of populations within the geographic extent of the species in the wild. Population performance is typically measured by rates of increase or decrease and is derived as a function of an individual's ability to live, die, grow, mature, and reproduce.

In this Opinion, we have described the status of the whitebark pine at the range wide scale, affected population scale, and the action area scale. We have also described the environmental baseline conditions at the scale of the action area and summarized the effects of the action. We make the determination for this species by considering any anticipated changes in the species' population or distribution. Whitebark pines are found on approximately 56,000,000 acres within the western United States (USFWS 2018) and at higher elevations (5,900- 9,300 ft) than most of the development activities associated with this Project. The primary stressors to WBP range-wide are the high incidence of the non-native white pine blister rust, large intense fires in WBP habitat (Keane 2001), mountain pine beetle (Raffa and Berryman 1987 and Logan et al 2010), and the impacts of climate change. Impacts to existing utility corridors or construction of new utility corridors are not considered a primary stressor and would not exacerbate the primary stressors. In making the following conclusion we considered that: the proposed action would affect a very small proportion of habitat occupied by whitebark pine, proposed minimization measures are likely to further reduce those effects, most of the effects would be in previously disturbed utility corridors, and all surveys to date for the species within the action area have been negative.

After reviewing the current status of the whitebark pine, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the GBSD Project is not likely to jeopardize the continued existence of the whitebark pine. The anticipated level of WBP removal caused by the proposed action will not appreciably reduce the overall population, reproduction, and distribution of WBP throughout its range.

CONSERVATION RECOMMENDATION

Following completion of preconstruction surveys for federally listed species, as proposed by USAF in the General Biological Conservation Measures, we recommend coordination with the Service's Montana Ecological Services Office, the Helena-Lewis and Clark National Forest, and any other landowner(s) found to have whitebark pine on their property. This would allow us the opportunity to coordinate and advise on implementation of the proposed conservation measures and to be aware of the true location(s) and extent of occupied habitat affected by the proposed action.

REINITIATION NOTICE

This concludes formal consultation on the Proposed Sentinel Ground Based Strategic Deterrent Intercontinental Ballistic Missile System and Minuteman III Decommissioning Project. As provided in 50 CFR §402.16, reinitiation of consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this biological opinion or written

concurrence; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Please refer to the ECOSphere consultation number, 2022-0054024, in future correspondence concerning this project. Should you require further assistance or if you have any questions please contact Darren LeBlanc, Regional Section 7 Coordinator for the Mountain Prairie Region, at Darren_leblanc@fws.gov or (303) 236-4046.

MARIA BOROJA Digitally signed by MARIA BOROJA Date: 2023.01.19 10:31:26 -07'00'

Maria Boroja, acting for
Steve Small
Assistant Regional Director for Ecological Services

Date

Literature Cited

Arno, S.F. and R. J. Hoff. 1989. Silvics of Whtiebark Pine (*Pinus albicaulis*). United States Department of Agriculture, Forest Service, Intermountain Research Station, General Technical Report INT-253.

Fryer, J.L. 2002. *Pinus albicaulis*. In Fire Effects Information System (online). U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory.

Keane, R.E. 2001. Successional dynamics: modeling an anthropogenic threat. Pages 159–192 in: D.F. Tomback, S.F. Arno, and R.E. Keane, editors. Whitebark communities: ecology and restoration. Island Press, Washington, D.C., USA.

Logan, J.A., W.W. MacFarlane, and L. Willcox. 2010. Whitebark pine vulnerability to climate-driven mountain pine beetle disturbance in the Greater Yellowstone Ecosystem. Ecological Applications 20:895–902.

Maloney, P.E. 2014. The multivariate underpinnings of recruitment for three Pinus species in montane forests of the Sierra Nevada, USA. Plant Ecol. 215:261–274.

MTNHP (Montana Natural Heritage Program). 2021. Species Occurrences.

Perkins, D.L. and T.W. Swetnam. 1996. A dendroecological assessment of whitebark pine in the Sawtooth-Salmon River region, Idaho. Canadian Journal of Forest Research 26: 2123-2133.

Raffa, K.F. and A.A. Berryman. 1987. Interacting selective pressures in conifer-bark beetle systems: a basis for reciprocal adaptations? The American Naturalist 129:234–262.

USAF. 2022. Biological Assessment for the Ground Based Strategic Deterrent deployment and Minuteman III decommissioning and disposal. Plus amendments.

USFWS. 2018a. Species status assessment for the whitebark pine, *Pinus albicaulis.*

USFWS. 2021a. Whitebark pine species status assessment. Wyoming Ecological Services Field Office, Cheyenne, Wyoming.

USFWS. 2021b. Environmental Conservation Online System (ECOS) Threatened and Endangered Species.

USGS (U.S. Geological Survey). 2016. LANDFIRE Existing Vegetation Type layer.

Page intentionally left blank.

APPENDIX F: HAZARDOUS MATERIALS AND WASTE SUPPORTING INFORMATION

Contents

Page intentionally left blank.

F.1 CONTAMINATED SITE LOCATIONS WITHIN 0.125 MILE OF THE PROPOSED UTILITY CORRIDORS AND COMMUNICATION TOWERS

Note: The data provided in the table below is an excerpt from the EDR report for the proposed utility corridors and communication towers only. Some of the locations for the proposed corridor and towers are undetermined or subject to change. Further data reports or site inspections may be required prior to construction. The facilities in the table denote the registration address of a site identified (e.g., storage tank or landfill) by the EDR where data has been reported to Federal, State/Tribal, and local agencies for environmental management program purposes. The registration address might not coincide with the physical location of the item. In addition, the item may have multiple registrations and be stored in multiple databases, resulting in possible duplicate values being listed. Most records do not represent a release of contaminates or represent locations of known public health impacts from the release of contaminants. The information should be used for general reference only.

FACILITY	CITY	ST	MILES	DB_NAME	Installation
PINE BLUFFS (10.480)	PINE BLUFFS	WY	0.0000	SWF/LF	F.E. Warren
PINE BLUFFS (10.480)	PINE BLUFFS	WY	0.0000	SWF/LF	F.E. Warren
FE WARREN AFB MISSLE SILO	DALTON	NE	0.0182	LAST	F.E. Warren
FE WARREN AFB MISSLE SILO	DALTON	NE	0.0182	LAST	F.E. Warren
NIELSON TRUST PROPERTY-VRP	CHEYENNE	WY	0.0519	SWF/LF	F.E. Warren
NIELSON TRUST PROPERTY-VRP	CHEYENNE	WY	0.0519	SWF/LF	F.E. Warren
LOT 6 BLOCK 289	CHEYENNE	WY	0.0894	US BROWNFIELDS	F.E. Warren
LOT 6 BLOCK 289	CHEYENNE	WY	0.0894	US BROWNFIELDS	F.E. Warren
BURLINGTON NORTHERN - GLACIER PARK (63.186)	CHEYENNE	WY	0.0951	SWF/LF	F.E. Warren
BURLINGTON NORTHERN - GLACIER PARK (63.186)	CHEYENNE	WY	0.0951	SWF/LF	F.E. Warren
THEIS PETROLEUM	POTTER	NE	0.0000	LUST	F.E. Warren
THEIS PETROLEUM	POTTER	NE	0.0000	LUST	F.E. Warren
CHEYENNE COMPRESSOR	CARR	CO	0.0000	LUST	F.E. Warren
CHEYENNE COMPRESSOR	CARR	CO	0.0000	LUST	F.E. Warren
TUTLE & TUTLE TRUCKING INC	NUNN	CO	0.0000	LAST	F.E. Warren
TUTLE & TUTLE TRUCKING INC	NUNN	CO	0.0000	LAST	F.E. Warren
HIGH PLAINS COOP BULK FACILITY	STERLING	CO	0.0000	LUST	F.E. Warren
HIGH PLAINS COOP BULK FACILITY	STERLING	CO	0.0000	LUST	F.E. Warren
HIGH PLAINS COOP BULK FACILITY	STERLING	CO	0.0000	LAST	F.E. Warren
HIGH PLAINS COOP BULK FACILITY	STERLING	CO	0.0000	LAST	F.E. Warren
BRIGGSDALE SERVICE STATION	BRIGGSDALE	CO	0.0121	LUST	F.E. Warren
BRIGGSDALE SERVICE STATION	BRIGGSDALE	CO	0.0121	LUST	F.E. Warren
BRIGGSDALE SERVICE STATION	BRIGGSDALE	CO	0.0121	LAST	F.E. Warren

FACILITY	CITY	ST	MILES	DB_NAME	Installation
BRIGGSDALE SERVICE STATION	BRIGGSDALE	CO	0.0121	LAST	F.E. Warren
BRIGGSDALE SERVICE STATION	BRIGGSDALE	CO	0.0121	LAST	F.E. Warren
POTTER-DIX SCHOOL DIST	POTTER	NE	0.0862	LUST	F.E. Warren
POTTER-DIX SCHOOL DIST	POTTER	NE	0.0862	LUST	F.E. Warren
POTTER-DIX SCHOOL DIST	POTTER	NE	0.0862	LUST	F.E. Warren
HIGH PLAINS COOP-BULK PLANT	STERLING	CO	0.0953	LUST	F.E. Warren
HIGH PLAINS COOP-BULK PLANT	STERLING	CO	0.0953	LUST	F.E. Warren
HIGH PLAINS COOP-BULK PLANT	STERLING	CO	0.0953	LAST	F.E. Warren
HIGH PLAINS COOP-BULK PLANT	STERLING	CO	0.0953	LAST	F.E. Warren
BURLINGTON NORTHERN - GLACIER PARK (63.186)	CHEYENNE	WY	0.1731	SWF/LF	F.E. Warren
BURLINGTON NORTHERN - GLACIER PARK (63.186)	CHEYENNE	WY	0.1731	SWF/LF	F.E. Warren
LEOPOLD SOMERFELD #2838	POWER	MT	0.0000	LUST	Malmstrom
DONALD & ELLEN SMOOT #4128	POWER	MT	0.0000	LUST	Malmstrom
THE AUTO FARM INC #1142	BLACK EAGLE	MT	0.0000	LUST	Malmstrom
TOWN PUMP GREAT FALLS #1 #4858	GREAT FALLS	MT	0.0000	LUST	Malmstrom
PRO LUBE 1 #3557	GREAT FALLS	MT	0.0000	LUST	Malmstrom
CHUCKS EXXON #2478	GREAT FALLS	MT	0.0000	LUST	Malmstrom
US POST OFFICE AUGUSTA #2641	AUGUSTA	MT	0.0000	LUST	Malmstrom
BURLINGTON NORTHERN RAILROAD	GREAT FALLS	MT	0.0000	US BROWNFIELDS	Malmstrom
BURLINGTON NORTHERN RAILROAD	GREAT FALLS	MT	0.0000	US BROWNFIELDS	Malmstrom
WAGONS WEST #1811	AUGUSTA	MT	0.0000	LUST	Malmstrom
STANLEY J BALEK DBA STANS SERVICE #1543	AUGUSTA	MT	0.0000	LUST	Malmstrom
MAIN STREET INSURANCE #3962	BELT	MT	0.0000	LUST	Malmstrom
G S OIL CO #3981	ROY	MT	0.0000	LUST	Malmstrom
BOX ELDER RANCH #1847	ROY	MT	0.0000	LUST	Malmstrom
MOUNTAIN VIEW COOP #5072	RAYNESFORD	MT	0.0000	LUST	Malmstrom
GEYSER SCHOOL DIST 58 #755	GEYSER	MT	0.0000	LUST	Malmstrom
FARMERS UNION COOP #1109	GEYSER	MT	0.0000	LUST	Malmstrom
FORMER SAXTON GAS STATION #4671	HILGER	MT	0.0000	LUST	Malmstrom
BY WAY SERVICE #3025	STANFORD	MT	0.0000	LUST	Malmstrom
SAVE THE BARN	LEWISTOWN	MT	0.0000	US BROWNFIELDS	Malmstrom
SAVE THE BARN	LEWISTOWN	MT	0.0000	US BROWNFIELDS	Malmstrom
CENTURY PAVING #4320	LEWISTOWN	MT	0.0000	LUST	Malmstrom
MAIN ST. LOT	LEWISTOWN	MT	0.0000	US BROWNFIELDS	Malmstrom

FACILITY	CITY	ST	MILES	DB_NAME	Installation
MAIN ST. LOT	LEWISTOWN	MT	0.0000	US BROWNFIELDS	Malmstrom
LEWISTOWN FEED MILL PROPERTY	LEWISTOWN	MT	0.0000	US BROWNFIELDS	Malmstrom
LEWISTOWN FEED MILL PROPERTY	LEWISTOWN	MT	0.0000	US BROWNFIELDS	Malmstrom
LEWISTOWN FEED MILL PROPERTY	LEWISTOWN	MT	0.0000	US BROWNFIELDS	Malmstrom
CARQUEST STORE 10380 #4840	LEWISTOWN	MT	0.0000	LUST	Malmstrom
PJG MOTORSPORTS #5213	LEWISTOWN	MT	0.0000	LUST	Malmstrom
MCDONALDS CORP #786	LEWISTOWN	MT	0.0000	LUST	Malmstrom
JUDITH GAP OIL #1998	JUDITH GAP	MT	0.0000	LUST	Malmstrom
HAYNES STORE LUST TRUST #3723	JUDITH GAP	MT	0.0000	LUST	Malmstrom
MALMSTROM AFB L 1 #1420	JUDITH GAP	MT	0.0000	LUST	Malmstrom
HOLIDAY STATIONSTORE 273 #2207	GREAT FALLS	MT	0.0098	LUST	Malmstrom
MINI MART 769 #3511	GREAT FALLS	MT	0.0100	LUST	Malmstrom
BUD HAYES AUTO SERVICE & REPAIR #558	GREAT FALLS	MT	0.0100	LUST	Malmstrom
KUM AND GO STORE 833 #613	GREAT FALLS	MT	0.0102	LUST	Malmstrom
TOWN PUMP INC LEWISTOWN #5278	LEWISTOWN	MT	0.0106	LUST	Malmstrom
MIKE KOHUT AND SONS #480	STOCKETT	MT	0.0106	LUST	Malmstrom
CRAMER OIL BNSF LEASE SITE #4799	LEWISTOWN	MT	0.0110	LUST	Malmstrom
TOWN PUMP INC GREAT FALLS 4 FMR SKYWAY CONOCO #2548	GREAT FALLS	MT	0.0112	LUST	Malmstrom
GILLIGANS ISLAND 454 #527	GREAT FALLS	MT	0.0114	LUST	Malmstrom
ON YOUR WAY 10TH AVE S #690	GREAT FALLS	MT	0.0114	LUST	Malmstrom
BISON FORD CO	GREAT FALLS	MT	0.0114	LUST	Malmstrom
MALMSTROM AFB A 1 #3417	RAYNESFORD	MT	0.0121	LUST	Malmstrom
HOLIDAY VILLAGE EXXON #780	GREAT FALLS	MT	0.0123	LUST	Malmstrom
PARDIS CHIROPRACTIC CLINIC #2593	GREAT FALLS	MT	0.0123	LUST	Malmstrom
BN SANTA FE BELT #3312	BELT	MT	0.0127	LUST	Malmstrom
AARON L TILLMAN #447	BELT	MT	0.0127	LUST	Malmstrom
LEWIS & CLARK COUNTY SHOP #1051	AUGUSTA	MT	0.0134	LUST	Malmstrom
CIRCLE K 703 #132	GREAT FALLS	MT	0.0138	LUST	Malmstrom
CHEVRON SELF SERV #426	LEWISTOWN	MT	0.0140	LUST	Malmstrom
MALMSTROM AFB B 1 #3577	GEYSER	MT	0.0142	LUST	Malmstrom
AUGUSTA WELDING SHOP	AUGUSTA	MT	0.0144	US BROWNFIELDS	Malmstrom
AUGUSTA WELDING SHOP	AUGUSTA	MT	0.0144	US BROWNFIELDS	Malmstrom
MT DEPT HWY DENTON SITE #1924	DENTON	MT	0.0146	LUST	Malmstrom
TOWN PUMP INC GREAT FALLS 2 #133	GREAT FALLS	MT	0.0148	LUST	Malmstrom
G & S OIL CO BULK PLANT #1906	LEWISTOWN	MT	0.0148	LUST	Malmstrom

FACILITY	CITY	ST	MILES	DB_NAME	Installation
GODFATHERS PIZZA #4038	GREAT FALLS	MT	0.0153	LUST	Malmstrom
LYNN MILES PROPERTY #5250	GREAT FALLS	MT	0.0153	LUST	Malmstrom
HOLIDAY STATION STORE 267 #2597	GREAT FALLS	MT	0.0155	LUST	Malmstrom
HILGER COUNTRY STORE #4653	HILGER	MT	0.0157	LUST	Malmstrom
BELT THEATER	BELT	MT	0.0159	US BROWNFIELDS	Malmstrom
BELT THEATER	BELT	MT	0.0159	US BROWNFIELDS	Malmstrom
TOWN PUMP INC HARLOWTON #3627	HARLOWTON	MT	0.0159	LUST	Malmstrom
ERNIES AUTO #2819	LEWISTOWN	MT	0.0159	LUST	Malmstrom
ERNIE'S AUTO	LEWISTOWN	MT	0.0159	US BROWNFIELDS	Malmstrom
ERNIE'S AUTO	LEWISTOWN	MT	0.0159	US BROWNFIELDS	Malmstrom
ERNIE'S AUTO	LEWISTOWN	MT	0.0159	US BROWNFIELDS	Malmstrom
OTTO SHINE CAR WASH #666	GREAT FALLS	MT	0.0161	LUST	Malmstrom
DAHLGRIN MOTEL #2765	LEWISTOWN	MT	0.0165	LUST	Malmstrom
TACO TREAT #4501	GREAT FALLS	MT	0.0169	LUST	Malmstrom
CRAMER OIL INC #1001	LEWISTOWN	MT	0.0170	LUST	Malmstrom
SINCLAIR RETAIL LEWISTOWN #4543	LEWISTOWN	MT	0.0170	LUST	Malmstrom
MONTGOMERY WARD #781	GREAT FALLS	MT	0.0176	LUST	Malmstrom
WHEATLAND IMPLEMENT & REPAIR #2450	HARLOWTON	MT	0.0176	LUST	Malmstrom
TEXACO STATION FORMER #459	GREAT FALLS	MT	0.0182	LUST	Malmstrom
HILGER COUNTRY STORE	HILGER	MT	0.0186	US BROWNFIELDS	Malmstrom
HILGER COUNTRY STORE	HILGER	MT	0.0186	US BROWNFIELDS	Malmstrom
HILGER COUNTRY STORE	HILGER	MT	0.0186	US BROWNFIELDS	Malmstrom
MOVIE STORE	LEWISTOWN	MT	0.0188	US BROWNFIELDS	Malmstrom
MOVIE STORE	LEWISTOWN	MT	0.0188	US BROWNFIELDS	Malmstrom
VIDEO EXCITEMENT #4004	LEWISTOWN	MT	0.0188	LUST	Malmstrom
CROWLEY BUILDING LEWISTOWN	LEWISTOWN	MT	0.0189	US BROWNFIELDS	Malmstrom
CROWLEY BUILDING LEWISTOWN	LEWISTOWN	MT	0.0189	US BROWNFIELDS	Malmstrom
15TH STREET SERVICE #815	GREAT FALLS	MT	0.0193	LUST	Malmstrom
ON YOUR WAY	LEWISTOWN	MT	0.0197	US BROWNFIELDS	Malmstrom
ON YOUR WAY	LEWISTOWN	MT	0.0197	US BROWNFIELDS	Malmstrom
ON YOUR WAY	LEWISTOWN	MT	0.0197	US BROWNFIELDS	Malmstrom
ON YOUR WAY STORE	LEWISTOWN	MT	0.0197	LUST	Malmstrom
TAYLOR BROS INC #3580	GREAT FALLS	MT	0.0206	LUST	Malmstrom
MDOT MAINTENANCE SHOP #141	LEWISTOWN	MT	0.0210	LUST	Malmstrom
HAWK ELECTRIC #867	GREAT FALLS	MT	0.0214	LUST	Malmstrom

FACILITY	CITY	ST	MILES	DB_NAME	Installation
PARIS CLEANERS	LEWISTOWN	MT	0.0216	US BROWNFIELDS	Malmstrom
PARIS CLEANERS	LEWISTOWN	MT	0.0216	US BROWNFIELDS	Malmstrom
PARIS CLEANERS LEWISTOWN	LEWISTOWN	MT	0.0216	BROWNFIELDS	Malmstrom
REX GARAGE #1100	GEYSER	MT	0.0227	LUST	Malmstrom
LIONS PARK SUPER SERVICE #1280	GREAT FALLS	MT	0.0233	LUST	Malmstrom
PRO LUBE 2 #3533	GREAT FALLS	MT	0.0237	LUST	Malmstrom
ARPS EXXON #1542	AUGUSTA	MT	0.0248	LUST	Malmstrom
STRAND RANCH #1031	GEYSER	MT	0.0250	LUST	Malmstrom
MALMSTROM AFB B 7 #2003	GEYSER	MT	0.0250	LUST	Malmstrom
FIRESTONE STORE 4840 #3370	GREAT FALLS	MT	0.0252	LUST	Malmstrom
SINCLAIR RETAIL 25008 #956	GREAT FALLS	MT	0.0254	LUST	Malmstrom
KEITHS COUNTRY STORE #3212	GREAT FALLS	MT	0.0254	LUST	Malmstrom
LAFOUNTAIN BUILDING	LEWISTOWN	MT	0.0313	US BROWNFIELDS	Malmstrom
LAFOUNTAIN BUILDING	LEWISTOWN	MT	0.0313	US BROWNFIELDS	Malmstrom
WEISSMAN AND SONS DISPOSAL SITE	GREAT FALLS	MT	0.0320	SWF/LF	Malmstrom
WEISSMAN AND SONS DISPOSAL SITE	GREAT FALLS	MT	0.0320	SWF/LF	Malmstrom
NOONS 568 #3263	LEWISTOWN	MT	0.0326	LUST	Malmstrom
KERNAGHANS SERVICE 8TH AVENUE NORTH #397	GREAT FALLS	MT	0.0331	LUST	Malmstrom
MOODIE IMPLEMENT CO #555	LEWISTOWN	MT	0.0337	LUST	Malmstrom
MICHELS GARAGE #3438	RAYNESFORD	MT	0.0358	LUST	Malmstrom
NURSES SCHOOL (LEWISTOWN)	LEWISTOWN	MT	0.0366	US BROWNFIELDS	Malmstrom
NURSES SCHOOL (LEWISTOWN)	LEWISTOWN	MT	0.0366	US BROWNFIELDS	Malmstrom
NOONS 571 #5021	GREAT FALLS	MT	0.0371	LUST	Malmstrom
LEWISTOWN NURSES SCHOOL	LEWISTOWN	MT	0.0386	BROWNFIELDS	Malmstrom
PARIS GIBSON SQUARE MUSEUM OF ART	GREAT FALLS	MT	0.0386	US BROWNFIELDS	Malmstrom
PARIS GIBSON SQUARE MUSEUM OF ART	GREAT FALLS	MT	0.0386	US BROWNFIELDS	Malmstrom
VACANT LOT # 5047	LEWISTOWN	MT	0.0396	LUST	Malmstrom
JOSEPH W JUDISCH #1505	POWER	MT	0.0398	LUST	Malmstrom
HOLIDAY STATIONSTORE 10 #972	GREAT FALLS	MT	0.0402	LUST	Malmstrom
COURTESY CHEVROLET #1260	LEWISTOWN	MT	0.0409	LUST	Malmstrom
MILO HALVORSON #1731	LEWISTOWN	MT	0.0420	LUST	Malmstrom
KERNAGHANS SERVICE 9TH AVE SOUTH #607	GREAT FALLS	MT	0.0441	LUST	Malmstrom

FACILITY	CITY	ST	MILES	DB_NAME	Installation
ELMERS PANCAKE & STEAK HOUSE #4355	GREAT FALLS	MT	0.0462	LUST	Malmstrom
HIGH PLAINS SANITARY LANDFILL	FLOWEREE	MT	0.0466	SWF/LF	Malmstrom
HIGH PLAINS SANITARY LANDFILL	FLOWEREE	MT	0.0466	SWF/LF	Malmstrom
TRANSPORT LEASING CO #2698	BLACK EAGLE	MT	0.0479	LUST	Malmstrom
BUILDING 1447 #3752	MALMSTROM AFB	MT	0.0523	LUST	Malmstrom
SONGERS EXXON SERVICE #2973	JUDITH GAP	MT	0.0527	LUST	Malmstrom
SHUMAKER TRUCKING AND EXCAVATING #3084	BLACK EAGLE	MT	0.0563	LUST	Malmstrom
BROADWAY APARTMENTS	LEWISTOWN	MT	0.0591	US BROWNFIELDS	Malmstrom
BROADWAY APARTMENTS	LEWISTOWN	MT	0.0591	US BROWNFIELDS	Malmstrom
LINKER OIL BULK PLANT #3968	DENTON	MT	0.0597	LUST	Malmstrom
C M RUSSELL US POSTAL SERVICE #580	GREAT FALLS	MT	0.0600	LUST	Malmstrom
GILL RESIDENCE #1212	LEWISTOWN	MT	0.0608	LUST	Malmstrom
INA M YEAEGER #1127	LEWISTOWN	MT	0.0619	LUST	Malmstrom
LEWISTOWN EAGLES MANOR	LEWISTOWN	MT	0.0699	US BROWNFIELDS	Malmstrom
LEWISTOWN EAGLES MANOR	LEWISTOWN	MT	0.0699	US BROWNFIELDS	Malmstrom
AUTO SERVICE CENTER #2713	LEWISTOWN	MT	0.0733	LUST	Malmstrom
EDDIES CORNER INC #1147	MOORE	MT	0.0754	LUST	Malmstrom
MONTANA POWER CO #142	LEWISTOWN	MT	0.0759	LUST	Malmstrom
ALICE C KLIMAS #1098	BELT	MT	0.0759	LUST	Malmstrom
FORMER HUSKY STATION 3563 #839	GREAT FALLS	MT	0.0769	LUST	Malmstrom
COUNTRY CLUB EXPRESS INC #2444	GREAT FALLS	MT	0.0786	LUST	Malmstrom
DENTON SCHOOL DIST 84 #3202	DENTON	MT	0.0797	LUST	Malmstrom
G W SALES BULK PLANT #2766	STANFORD	MT	0.0805	LUST	Malmstrom
FOUNTAIN TERRACE CONDOMINIUMS #1774	LEWISTOWN	MT	0.0814	LUST	Malmstrom
TAYLORS HONEY INC #1955	STANFORD	MT	0.0854	LUST	Malmstrom
N & H TRANSPORTATION #4116	GREAT FALLS	MT	0.0860	LUST	Malmstrom
BARNEY & JOANN FLESCH #1991	LEWISTOWN	MT	0.0873	LUST	Malmstrom
MARY ELDER RESIDENCE #3699	LEWISTOWN	MT	0.0900	LUST	Malmstrom
STOCKTON OIL CO GREAT FALLS #460	GREAT FALLS	MT	0.0900	LUST	Malmstrom
RUTH GRAHAM PROPERTY #4358	GREAT FALLS	MT	0.0951	LUST	Malmstrom
CASCADE DISTRICT VAUGHN	GREAT FALLS	MT	0.0962	SWF/LF	Malmstrom
CASCADE DISTRICT VAUGHN	GREAT FALLS	MT	0.0962	SWF/LF	Malmstrom

FACILITY	CITY	ST	MILES	DB_NAME	Installation
ULM COUNTRY STORE #2968	ULM	MT	0.1000	LUST	Malmstrom
BETTY OSTERHOLM RESIDENCE #2474	LEWISTOWN	MT	0.1023	LUST	Malmstrom
BAYSIDE DISPOSAL INC	LEWISTOWN	MT	0.1025	SWF/LF	Malmstrom
BAYSIDE DISPOSAL INC	LEWISTOWN	MT	0.1025	SWF/LF	Malmstrom
GUS & JACKS TIRE SHOP #2876	GREAT FALLS	MT	0.1027	LUST	Malmstrom
RICHARD JERGESEN #1792	LEWISTOWN	MT	0.1034	LUST	Malmstrom
BIG SKY BIBLE COLLEGE #1161	LEWISTOWN	MT	0.1034	LUST	Malmstrom
ECHOZ PREGNANCY CARE CENTER	GREAT FALLS	MT	0.1049	US BROWNFIELDS	Malmstrom
ECHOZ PREGNANCY CARE CENTER	GREAT FALLS	MT	0.1049	US BROWNFIELDS	Malmstrom
BLACK EAGLE SERVICE CENTER #923	BLACK EAGLE	MT	0.1063	LUST	Malmstrom
KEITH ROYSTON #1434	MOORE	MT	0.1180	LUST	Malmstrom
KRANZ FLOWERS & GIFTS PROPERTY	GREAT FALLS	MT	0.1182	US BROWNFIELDS	Malmstrom
KRANZ FLOWERS & GIFTS PROPERTY	GREAT FALLS	MT	0.1182	US BROWNFIELDS	Malmstrom
FORMER KRANZ FLOWERS & GIFTS #5148	GREAT FALLS	MT	0.1182	LUST	Malmstrom
GEYSER LANDFILL	GEYSER	MT	0.1214	SWF/LF	Malmstrom
GEYSER LANDFILL	GEYSER	MT	0.1214	SWF/LF	Malmstrom
CITY OF GREAT FALLS	GREAT FALLS	MT	0.1316	SWF/LF	Malmstrom
CITY OF GREAT FALLS	GREAT FALLS	MT	0.1316	SWF/LF	Malmstrom
UNITED METHODIST CHURCH DENTON #1123	DENTON	MT	0.1415	LUST	Malmstrom
MUSICK IMPLEMENT CO #4701	DENTON	MT	0.1439	LUST	Malmstrom
FARMERS STATE BANK DENTON #3777	DENTON	MT	0.1441	LUST	Malmstrom
MEADOW CREEK RANCH INC #1442	GARNEILL	MT	0.1739	LUST	Malmstrom
CENTRAL MONTANA COOP TOWN SITE #125	DENTON	MT	0.1839	LUST	Malmstrom
LINKER OIL CO #189	DENTON	MT	0.1847	LUST	Malmstrom
CENTRAL MONTANA COOP BULK PLANT #3267	DENTON	MT	0.1877	LUST	Malmstrom
GLASS TRUCKING INC #2168	DENTON	MT	0.1938	LUST	Malmstrom
DONALD R BARBER #1126	DENTON	MT	0.2140	LUST	Malmstrom
HARVEST HILLS CONOCO #3675	GREAT FALLS	MT	0.2642	LUST	Malmstrom
SINCLAIR RETAIL 25001 #3403	GREAT FALLS	MT	0.2968	LUST	Malmstrom
A & C MOTEL #3522	CASCADE	MT	0.3384	LUST	Malmstrom
US POST OFFICE CASCADE #121	CASCADE	MT	0.4750	LUST	Malmstrom
WAGONS WEST	AUGUSTA	MT	0.0000	LUST	Malmstrom

FACILITY	CITY	ST	MILES	DB_NAME	Installation
FARMERS STATE BANK DENTON	DENTON	MT	0.0000	LUST	Malmstrom
WOODHALL DISTRIBUTING DENTON	DENTON	MT	0.0117	LUST	Malmstrom
GLASS TRUCKING INC UST	DENTON	MT	0.0142	LUST	Malmstrom
CENTRAL MONTANA COOP BULK PLANT #3267	DENTON	MT	0.0148	LUST	Malmstrom
WOODHALL DISTRIBUTING	DENTON	MT	0.0150	LUST	Malmstrom
LARRY EICHHORN	LEWISTOWN	MT	0.0316	LUST	Malmstrom
MUSICK IMPLEMENT CO	DENTON	MT	0.0331	LUST	Malmstrom
UNITED METHODIST CHURCH DENTON	DENTON	MT	0.0858	LUST	Malmstrom
AUGUSTA WELDING SHOP	AUGUSTA	MT	0.0886	US BROWNFIELDS	Malmstrom
AUGUSTA WELDING SHOP	AUGUSTA	MT	0.0886	US BROWNFIELDS	Malmstrom
ROBERT TINDALL CONTRACTOR	LEWISTOWN	MT	0.0973	LUST	Malmstrom
AUGUSTA CONOCO UST	AUGUSTA	MT	0.1131	LUST	Malmstrom
US POST OFFICE AUGUSTA	AUGUSTA	MT	0.1212	LUST	Malmstrom
ASH STREET PROPERTY	LEWISTOWN	MT	0.1250	US BROWNFIELDS	Malmstrom
ASH STREET PROPERTY	LEWISTOWN	MT	0.1250	US BROWNFIELDS	Malmstrom
ASH STREET PROPERTY	LEWISTOWN	MT	0.1250	US BROWNFIELDS	Malmstrom
AUGUSTA GAS STATION LLC	AUGUSTA	MT	0.1850	LUST	Malmstrom
BIG SKY GAS O MART	CHOTEAU	MT	0.0000	LUST	Malmstrom
SUN RIVER CATTLE CO INC	VAUGHN	MT	0.0000	LUST	Malmstrom
R O SPECK GOLF COURSE	GREAT FALLS	MT	0.0000	LUST	Malmstrom
CURTISS SERVICE CENTER	SIMMS	MT	0.0000	LUST	Malmstrom
JACK PACHEK	GREAT FALLS	MT	0.0000	LUST	Malmstrom
LORANG OIL CO	CASCADE	MT	0.0000	LUST	Malmstrom
MATTSON BULK PLANT	CASCADE	MT	0.0000	LUST	Malmstrom
RINDALS WEST END SERVICE	LEWISTOWN	MT	0.0000	LUST	Malmstrom
REESE TIRE AND FUEL CENTER	LEWISTOWN	MT	0.0000	US BROWNFIELDS	Malmstrom
REESE TIRE AND FUEL CENTER	LEWISTOWN	MT	0.0000	US BROWNFIELDS	Malmstrom
SLETTEN CONSTRUCTION CO UST	GREAT FALLS	MT	0.0119	LUST	Malmstrom
FORD NEW HOLLAND	GREAT FALLS	MT	0.0119	LUST	Malmstrom
BEST OIL DISTRIBUTING INC	GREAT FALLS	MT	0.0121	LUST	Malmstrom
VALLEY COUNTRY STORE INC	VAUGHN	MT	0.0125	LUST	Malmstrom
H AND R #4	GREAT FALLS	MT	0.0182	LUST	Malmstrom
HIGHWAY GROCERY	CASCADE	MT	0.0233	LUST	Malmstrom
OWNER NOT DETERMINED AT THIS TIME	GREAT FALLS	MT	0.0273	LUST	Malmstrom

FACILITY	CITY	ST	MILES	DB_NAME	Installation
MALMSTROM AFB I 1	CASCADE	MT	0.0305	LUST	Malmstrom
NELSON PLUMBING AND HEATING	GREAT FALLS	MT	0.0358	LUST	Malmstrom
MATTSON LUMBER CO	CASCADE	MT	0.0422	LUST	Malmstrom
BREEN OIL RAILROAD LEASE	CHOTEAU	MT	0.0475	LUST	Malmstrom
VAUGHN TRUCK STOP	VAUGHN	MT	0.0479	LUST	Malmstrom
QUIET DAY MANOR	CASCADE	MT	0.0557	US BROWNFIELDS	Malmstrom
QUIET DAY MANOR	CASCADE	MT	0.0557	US BROWNFIELDS	Malmstrom
RAYMOND L AND ARLENE M ANDERSON	CHOTEAU	MT	0.0691	LUST	Malmstrom
LEWISTOWN AFS COMMUNICATION ANNEX #3291	LEWISTOWN	MT	0.0930	LUST	Malmstrom
TETON COUNTY NURSING HOME	CHOTEAU	MT	0.1131	US BROWNFIELDS	Malmstrom
TETON COUNTY NURSING HOME	CHOTEAU	MT	0.1131	US BROWNFIELDS	Malmstrom
TRACTOR AND EQUIPMENT CO OF GREAT FALLS	GREAT FALLS	MT	0.1178	LUST	Malmstrom
RISING WOLF CONSTRUCTION #3543	GREAT FALLS	MT	0.1248	LUST	Malmstrom
TRANSPORT LEASING CO BLACK EAGLE	BLACK EAGLE	MT	0.3727	LUST	Malmstrom
SUNDAHLS SERVICE	MOHALL	ND	0.0000	LUST	Minot
SUNDAHLS SERVICE	MOHALL	ND	0.0000	LUST	Minot
TOLLEY PBR INERT WASTE LANDFILL	TOLLEY	ND	0.0000	SWF/LF	Minot
TOLLEY PBR INERT WASTE LANDFILL	TOLLEY	ND	0.0000	SWF/LF	Minot
LEON CRAIG BULK LEASE PROPERTY	TOLLEY	ND	0.0000	LUST	Minot
LEON CRAIG BULK LEASE PROPERTY	TOLLEY	ND	0.0000	LUST	Minot
LAWSON OIL CO.	DONNYBROOK	ND	0.0000	LUST	Minot
LAWSON OIL CO.	DONNYBROOK	ND	0.0000	LUST	Minot
STANDARD OIL BULK DONNYBROOK	DONNYBROOK	ND	0.0000	LUST	Minot
STANDARD OIL BULK DONNYBROOK	DONNYBROOK	ND	0.0000	LUST	Minot
FARMERS UNION OIL CARPIO	CARPIO	ND	0.0000	LUST	Minot
FARMERS UNION OIL CARPIO	CARPIO	ND	0.0000	LUST	Minot
CARPIO PBR INERT WASTE LANDFILL	CARPIO	ND	0.0000	SWF/LF	Minot
CARPIO PBR INERT WASTE LANDFILL	CARPIO	ND	0.0000	SWF/LF	Minot
MINOT AIR FORCE BASE	MINOT AFB	ND	0.0000	LUST	Minot
MINOT AIR FORCE BASE	MINOT AFB	ND	0.0000	LUST	Minot
MINOT AIR FORCE BASE	MINOT AFB	ND	0.0000	SWF/LF	Minot
MINOT AIR FORCE BASE	MINOT AFB	ND	0.0000	SWF/LF	Minot
BERTHOLD PBR INERT WASTE LANDFILL	BERTHOLD	ND	0.0000	SWF/LF	Minot

FACILITY	CITY	ST	MILES	DB_NAME	Installation
BERTHOLD PBR INERT WASTE LANDFILL	BERTHOLD	ND	0.0000	SWF/LF	Minot
DEAVER OIL COMPANY	BERTHOLD	ND	0.0000	LUST	Minot
DEAVER OIL COMPANY	BERTHOLD	ND	0.0000	LUST	Minot
A AND D SERVICE REPAIR CENTER	BERTHOLD	ND	0.0000	LUST	Minot
A AND D SERVICE REPAIR CENTER	BERTHOLD	ND	0.0000	LUST	Minot
HARRIS EQUIPMENT INC	MINOT	ND	0.0000	LUST	Minot
HARRIS EQUIPMENT INC	MINOT	ND	0.0000	LUST	Minot
FLYING J TRAVEL PLAZA 550	MINOT	ND	0.0000	LUST	Minot
FLYING J TRAVEL PLAZA 550	MINOT	ND	0.0000	LUST	Minot
FLYING J TRAVEL PLAZA 550	MINOT	ND	0.0000	LUST	Minot
DAKOTA SQUARE TESORO	MINOT	ND	0.0000	LUST	Minot
DAKOTA SQUARE TESORO	MINOT	ND	0.0000	LUST	Minot
CENEX GENERAL STORE DAKOTA SQUARE	MINOT	ND	0.0000	LUST	Minot
CENEX GENERAL STORE DAKOTA SQUARE	MINOT	ND	0.0000	LUST	Minot
MCDONALDS RESTAURANTS	MINOT	ND	0.0000	LUST	Minot
MCDONALDS RESTAURANTS	MINOT	ND	0.0000	LUST	Minot
KXMC-TV	MINOT	ND	0.0000	LUST	Minot
KXMC-TV	MINOT	ND	0.0000	LUST	Minot
VERENDRYE ELECTRIC COOPERATIVE	MINOT	ND	0.0000	LUST	Minot
VERENDRYE ELECTRIC COOPERATIVE	MINOT	ND	0.0000	LUST	Minot
CENEX 52 C STORE	VELVA	ND	0.0000	LUST	Minot
CENEX 52 C STORE	VELVA	ND	0.0000	LUST	Minot
FORMER BOWLING ALLEY/ MOTORCYCLE SHOP	VELVA	ND	0.0000	US BROWNFIELDS	Minot
FORMER BOWLING ALLEY/ MOTORCYCLE SHOP	VELVA	ND	0.0000	US BROWNFIELDS	Minot
VELVA PBR INERT WASTE LANDFILL	VELVA	ND	0.0000	SWF/LF	Minot
VELVA PBR INERT WASTE LANDFILL	VELVA	ND	0.0000	SWF/LF	Minot
FARMERS UNION OIL COMPANY	PLAZA	ND	0.0000	LUST	Minot
FARMERS UNION OIL COMPANY	PLAZA	ND	0.0000	LUST	Minot
RYDER PBR INERT WASTE LANDFILL	RYDER	ND	0.0000	SWF/LF	Minot
RYDER PBR INERT WASTE LANDFILL	RYDER	ND	0.0000	SWF/LF	Minot
DOUGLAS BULK PLANT	DOUGLAS	ND	0.0000	LUST	Minot
DOUGLAS BULK PLANT	DOUGLAS	ND	0.0000	LUST	Minot

FACILITY	CITY	ST	MILES	DB_NAME	Installation
MAX PUBLIC SCHOOL	MAX	ND	0.0000	LUST	Minot
MAX PUBLIC SCHOOL	MAX	ND	0.0000	LUST	Minot
BENEDICT PBR INERT WASTE LANDFILL	BENEDICT	ND	0.0000	SWF/LF	Minot
BENEDICT PBR INERT WASTE LANDFILL	BENEDICT	ND	0.0000	SWF/LF	Minot
MERCER SCHOOL BUILDING	MERCER	ND	0.0000	BROWNFIELDS	Minot
CENEX C STORE	MAX	ND	0.0000	LUST	Minot
CENEX C STORE	MAX	ND	0.0000	LUST	Minot
PLAZA PBR INERT WASTE LANDFILL	PLAZA	ND	0.0216	SWF/LF	Minot
PLAZA PBR INERT WASTE LANDFILL	PLAZA	ND	0.0216	SWF/LF	Minot
DOUGLAS PUBLIC SCHOOL BUILDING	DOUGLAS	ND	0.0432	US BROWNFIELDS	Minot
DOUGLAS PUBLIC SCHOOL BUILDING	DOUGLAS	ND	0.0432	US BROWNFIELDS	Minot
DOUGLAS PUBLIC SCHOOL BUILDING	DOUGLAS	ND	0.0432	US BROWNFIELDS	Minot
DOUGLAS PUBLIC SCHOOL BUILDING	DOUGLAS	ND	0.0432	BROWNFIELDS	Minot
RENVILLE CORNER	MOHALL	ND	0.0436	LUST	Minot
RENVILLE CORNER	MOHALL	ND	0.0436	LUST	Minot
HETTS AGRI SERVICE	MOHALL	ND	0.0451	LUST	Minot
HETTS AGRI SERVICE	MOHALL	ND	0.0451	LUST	Minot
MOHALL PBR INERT WASTE LANDFILL - RENVILLE	MOHALL	ND	0.0519	SWF/LF	Minot
MOHALL PBR INERT WASTE LANDFILL - RENVILLE	MOHALL	ND	0.0519	SWF/LF	Minot
OK TIRE STORE	MINOT	ND	0.0604	LUST	Minot
OK TIRE STORE	MINOT	ND	0.0604	LUST	Minot
FARMERS UNION OIL COMPANY	MOHALL	ND	0.0871	LUST	Minot
FARMERS UNION OIL COMPANY	MOHALL	ND	0.0871	LUST	Minot
WESTLIE MOTOR COMPANY	MINOT	ND	0.0879	LUST	Minot
WESTLIE MOTOR COMPANY	MINOT	ND	0.0879	LUST	Minot
MINOT AIR FORCE BASE	BENEDICT	ND	0.0884	LUST	Minot
MINOT AIR FORCE BASE	BENEDICT	ND	0.0884	LUST	Minot
WIELO BUILDING	VELVA	ND	0.0958	US BROWNFIELDS	Minot
WIELO BUILDING	VELVA	ND	0.0958	US BROWNFIELDS	Minot
WIELO BUILDING	VELVA	ND	0.0958	US BROWNFIELDS	Minot
MINOT AIR FORCE BASE	MAKOTI	ND	0.1011	LUST	Minot
MINOT AIR FORCE BASE	MAKOTI	ND	0.1011	LUST	Minot
ERVS SERVICE	VELVA	ND	0.1163	LUST	Minot
ERVS SERVICE	VELVA	ND	0.1163	LUST	Minot

FACILITY	CITY	ST	MILES	DB_NAME	Installation
FORMER COFFEE SHOP	VELVA	ND	0.1189	US BROWNFIELDS	Minot
FORMER COFFEE SHOP	VELVA	ND	0.1189	US BROWNFIELDS	Minot
MROC-SS	VELVA	ND	0.1197	LUST	Minot
MROC-SS	VELVA	ND	0.1197	LUST	Minot
FARMERS UNION OIL COMPANY BULK	GARRISON	ND	0.2905	LUST	Minot
FARMERS UNION OIL COMPANY BULK	GARRISON	ND	0.2905	LUST	Minot
ESLINGER CONOCO	GARRISON	ND	0.2930	LUST	Minot
ESLINGER CONOCO	GARRISON	ND	0.2930	LUST	Minot
FARMERS UNION OIL COMPANY OF GARRISON	GARRISON	ND	0.2962	LUST	Minot
FARMERS UNION OIL COMPANY OF GARRISON	GARRISON	ND	0.2962	LUST	Minot
CUSTOMER CRITTERS TAXIDERMY & COUNTRY VARIETY	WESTHOPE	ND	0.0000	LUST	Minot
CUSTOMER CRITTERS TAXIDERMY & COUNTRY VARIETY	WESTHOPE	ND	0.0000	LUST	Minot
JOHNSON OIL CO, BULK	BOWBELLS	ND	0.0000	LUST	Minot
JOHNSON OIL CO, BULK	BOWBELLS	ND	0.0000	LUST	Minot
BOWBELLS PBR INERT WASTE LANDFILL	BOWBELLS	ND	0.0000	SWF/LF	Minot
BOWBELLS PBR INERT WASTE LANDFILL	BOWBELLS	ND	0.0000	SWF/LF	Minot
W O TRUCK STOP	BOWBELLS	ND	0.0136	LUST	Minot
W O TRUCK STOP	BOWBELLS	ND	0.0136	LUST	Minot

APPENDIX G: NOISE SUPPORTING INFORMATION

Contents

Page intentionally left blank.

G.1 Construction Equipment

Common Equipment	On-Base	MAF	LF	Utility Corridor	Comm Tower	Single Generator
	Number of Pieces of Equipment					
All Other Equipment > 5 HP	2	0	0	1	1	0
Backhoe	1	1	0	1	1	0
Compactor (ground)	0	0	0	0	0	0
Compressor (air)	1	1	1	0	0	0
Crane	1	1	0	0	1	0
Dozer	1	1	0	0	0	0
Dump Truck	0	0	0	0	0	0
Excavator	1	1	1	0	0	0
Generator	0	0	0	0	0	1
Grader	1	1	1	0	0	0
Paver	1	0	0	0	0	0
Pickup Truck	3	3	3	3	3	0
Scraper	0	0	0	1	0	0
Tractor	0	0	0	0	0	0
Piece of Equipment	**12**	**9**	**6**	**6**	**6**	**1**

G.2 Maximum Sound Levels from Construction Equipment

Common Equipment	L_{max} @ 50 feet (dBA)	On-Base	MAF	LF	Utility Corridor	Communication Tower
		Combined Sound Level (dBA)				
All Other Equipment > 5 HP	85	88.0	0.0	0.0	85.0	85.0
Backhoe	80	80.0	80.0	0.0	80.0	80.0
Compactor (ground)	80	0.0	0.0	0.0	0.0	0.0
Compressor (air)	80	80.0	80.0	80.0	0.0	0.0
Crane	85	85.0	85.0	0.0	0.0	85.0
Dozer	85	85.0	85.0	0.0	0.0	0.0
Dump Truck	84	0.0	0.0	0.0	0.0	0.0
Excavator	85	85.0	85.0	85.0	0.0	0.0
Generator	82	0.0	0.0	0.0	0.0	0.0
Grader	85	85.0	85.0	85.0	0.0	0.0
Paver	85	85.0	0.0	0.0	0.0	0.0
Pickup Truck	55	59.8	59.8	59.8	59.8	59.8
Scraper	85	0.0	0.0	0.0	85.0	0.0
Tractor	84	0.0	0.0	0.0	0.0	0.0
Overall Sound Level (dBA)		**93.8**	**91.7**	**88.7**	**88.7**	**88.7**

Note: Lmax used as a conservative measure of cumulative construction noise, and average sound levels would be appreciably lower than those shown herein.

G.3 Construction Noise Assumptions

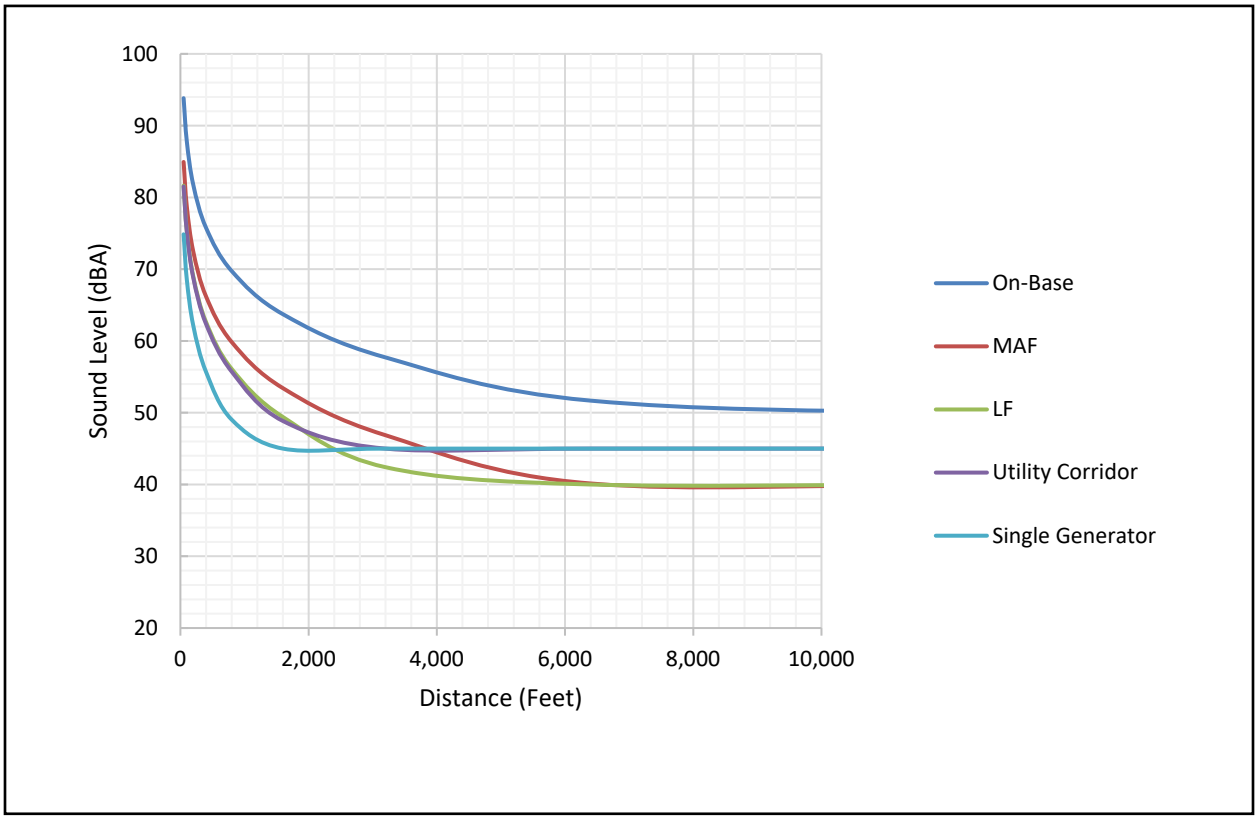
	On-Base	MAF	LF	Utility Corridor	Tower	Backup Generator	Units
Maximum Sound Level @ 50 Feet (dBA)	94	92	89	89	89	82	dBA
Ground Type	Hard	Soft	Soft	Soft	Soft	Soft	dBA
Background Sound Level (dBA)	50	40	40	45	45	45	dBA

Sources: FHWA 2006; Harris 1998; NPS 2017.

G.4 Distance vs. Sound Level

Distance (feet)	Sound Level (dBA)					
	On-Base	MAF	LF	Utility Corridor	Tower	Backup Generator
50	94	85	82	82	82	75
100	88	79	75	75	75	69
200	82	72	69	69	69	62
400	76	66	63	62	62	56
800	70	60	56	56	56	49
1,600	64	53	49	49	49	45
3,200	58	47	42	45	45	45
6,400	52	40	40	45	45	45
12,800	50	40	40	45	45	45
25,600	50	40	40	45	45	45

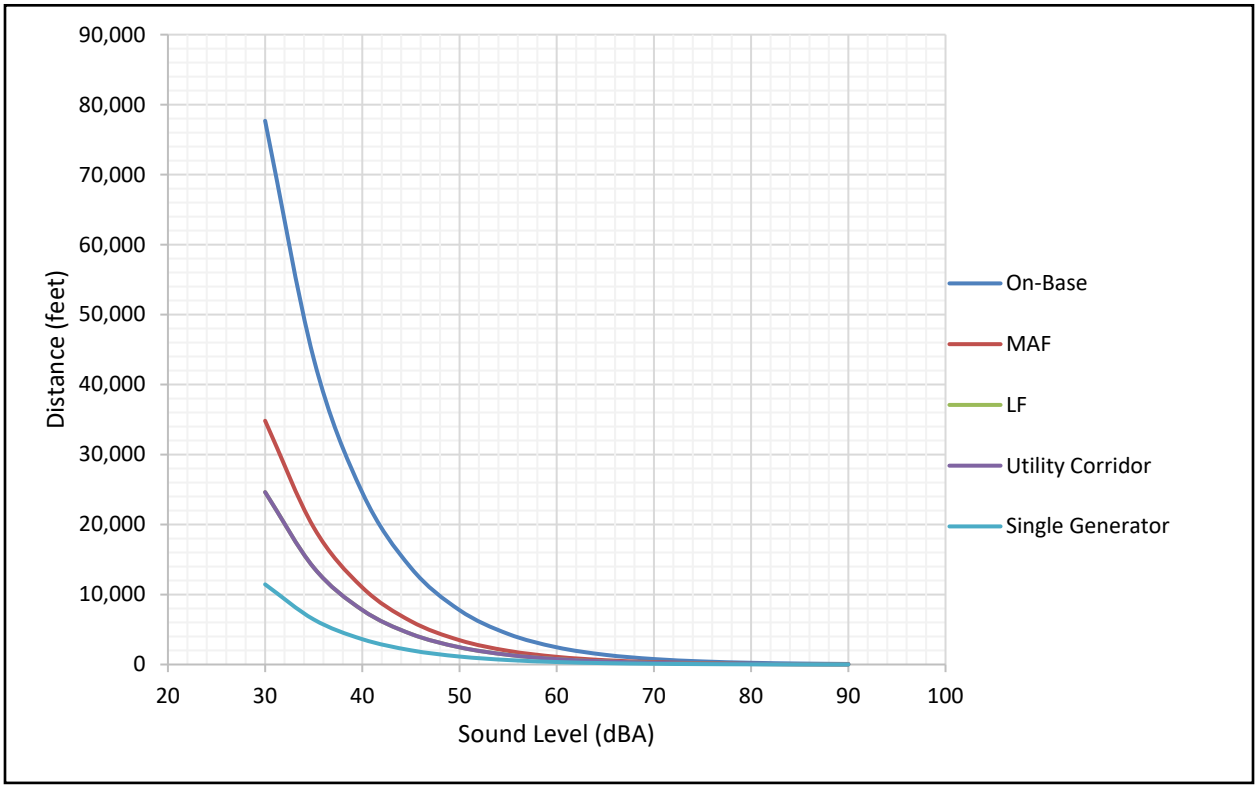
Sources: FHWA 2006; Harris 1998.



G.5 Sound Level vs. Distance

Sound Level (dBA)	Distance (feet)					
	On-Base	MAF	LF	Utility Corridor	Tower	Backup Generator
30	77,694	34,828	24,633	24,633	24,633	11,447
35	43,691	19,582	13,849	13,849	13,849	6,434
40	24,569	11,008	7,784	7,784	7,784	3,615
45	13,816	6,187	4,374	4,374	4,374	2,029
50	7,769	3,476	2,457	2,457	2,457	1,138
55	4,369	1,951	1,378	1,378	1,378	636
60	2,457	1,094	772	772	772	354
65	1,382	612	430	430	430	195
70	777	340	238	238	238	105
75	437	187	130	130	130	54
80	246	101	68	68	68	24
85	138	52	33	33	33	8
90	78	23	12	12	12	1

Source FHWA 2006 and Harris 1998



G.6 Overview of Municipal Noise Regulations

Municipality	Not-To-Exceed Thresholds	Construction Noise Exempt?	Hours Construction Noise Exemption?	Backup Generators Exempt?	Ordinance
Weld County, Colorado	80 dBA Daytime 75 dBA Nighttime	Yes	From 9:00 p.m. to 7:00 a.m. - may be exceeded by 10 dB for 15 minutes per hour.	No	Weld County Ordinance 2000-1, Article IX - Noise
City of Sterling (Logan County, Colorado)	65-75 dBA Daytime 60-70 dBA Nighttime	No	N/A	No	Code of the City of Sterling Colorado Chapter 11 – Article III Noise
City of Helena (Lewis and Clark County, Montana)	80 dBA Daytime 75 dBA Nighttime for Industrial Land Uses	No	Construction projects shall be subject to the maximum permissible noise levels specified for industrial districts.	No	Code of the City of Helena Title 5, Chapter 7
Teton County, Montana	65 dBA	No	May be exceeded by 10 dBA for a single period, not to exceed 15 minutes per day.	No	Teton County Land Development Regulations. City Code of Chouteau, Title 4, Chapter 10 Noise Regulations.
Tremonton City (Box Elder County, Utah)	75-80 dBA Daytime 65-75 dBA Nighttime	Yes	6:00 a.m. to 10:00 p.m.	No	Tremonton City Zoning Ordinances Chapter 1.20 Noise Regulations.
Tooele County, Utah	Toole County 80-90 dBA Daytime 60-75 dBA Nighttime Tooele City 60 dBA Daytime 55 DBA Nighttime	No	No	No	Tooele County Ordinances, Title 6, Chapter 21 Noise Control Tooele City Ordinances, Title 11, Chapter 2, Noise Control

a. Logan County, Colorado; Davis and Box Elder Counties, Utah; Kimball County, Nebraska; Laramie and Platte Counties, Wyoming; Lewis and Clark, Cascade, Chouteau, Fergus, Judith Basin, and Wheatland Counties, Montana; and Burke, McLean, Renville, and Ward Counties, North Dakota do not maintain noise ordinances with strict not-to-exceed levels.
b. Bottineau and Mountrail Counties, North Dakota maintain noise ordinances that only apply to wind energy projects.
c. McHenry and Sheridan Counties, North Dakota zoning ordinance and plans provided for noise constraints for temporary housing camps.

APPENDIX H: TRANSPORTATION AND TRAFFIC SUPPORTING INFORMATION

Contents

This page intentionally left blank.

INTRODUCTION

Annual average daily traffic figures were obtained from the states' DOT websites and used to estimate LOS, providing a reasonable screening assessment to use in determining the level of effects under NEPA. The change in trip generation resulting from the personnel increase under the Proposed Action was calculated based on the Transportation Engineers Trip Generation Manual. The number of vehicle trips to the work sites (LFs, MAFs, and laydown areas) from Sentinel facilities (workforce hub, hiring center, and warehouse), within the missile field between LFs and MAFs, by personally owned vehicles by workforce hub craftsman during off-duty days (Sundays), and MMIII decommissioning and disposal were calculated based on information provided by the Air Force.

H.1 TRANSPORTATION AND TRAFFIC CALCULATIONS - PROPOSED ACTION

				Typical			Peak						
Purpose	**Vehicle Type**	**Origin**	**Destination**	**Number of Vehicles**	**Trips per Vehicle**	**Trips Per Day**	**Number of Vehicles**	**Trips per Vehicle**	**Trips Per Day**	**Approximate Mileage**	**Percent Peak Period**	**Typical Peak Period Trips**	**Peak Peak Period Trips**
Traveling To A Location													
Workforce bussing	Bus	Workforce Hub	MAFs	4	3	12	6	3	18	60	0.2	2.4	3.6
Workforce bussing	Bus	Workforce Hub	LFs	30	3	90	36	3	108	60	0.2	18	21.6
Hub support staff	POV	Workforce Hub	Other Varied Locations	110	5	550	110	5	550	60	0.15	82.5	82.5
Workforce support	Truck	Workforce Hub	LFs and MAFs	50	4	200	50	4	200	60	0.2	40	40
Workers personal use	POV	Hiring Center	Other Varied Locations	2,000	1	2,000	2,700	1	2,700	60	0.15	300	405
Workforce bussing	Bus	Workforce Hub	Hiring Center	1	3	3	1	3	3	60	0.33	0.99	0.99
Materials and supplies transport	Truck	Laydown Areas	LFs and MAFs	33	4	132	33	4	132	20	0.0625	8.25	8.25
Materials and supplies transport	Truck	Warehouse	Laydown Areas	8	4	32	8	4	32	60	0.0625	2	2
Roving medical vehicles	Medical Vehicles	Other Varied Locations	LFs and MAFs	6	4	24	6	4	24	20	0.0625	1.5	1.5
Heavy equipment transport	Truck	LFs and MAFs	LFs and MAFs	10	5	50	11	5	55	30	0.0625	3.125	3.4375
Earthwork dump trucks	Truck	LFs and MAFs	LFs and MAFs	7	4	28	7	4	28	60	0.0625	1.75	1.75
Water and fuel trucks	Truck	Laydown Areas	LFs and MAFs	5	8	40	5	8	40	20	0.0625	2.5	2.5
Concrete trucks	Truck	Laydown Areas	LFs and MAFs	17	3	51	17	3	51	45	0.0625	3.1875	3.1875
Returning From A Location													
Workforce bussing	Bus	MAFs	Workforce Hub	4	3	12	6	3	18	60	0.2	2.4	3.6
Workforce bussing	Bus	LFs	Workforce Hub	30	3	90	36	3	108	60	0.2	18	21.6
Hub support staff	POV	Other Varied Locations	Workforce Hub	110	5	550	110	5	550	60	0.15	82.5	82.5
Workforce support	Truck	LFs and MAFs	Workforce Hub	50	4	200	50	4	200	60	0.2	40	40
Workers personal use	POV	Other Varied Locations	Hiring Center	2,000	1	2,000	2,700	1	2,700	60	0.0625	125	168.75
Workforce bussing	Bus	Hiring Center	Workforce Hub	2	4	8	2	4	8	60	0.33	2.64	2.64
Materials and supplies transport	Truck	LFs and MAFs	Laydown Areas	33	4	132	33	4	132	20	0.0625	8.25	8.25
Materials and supplies transport	Truck	Laydown Areas	Warehouse	8	4	32	8	4	32	60	0.0625	2	2
Roving medical vehicles	Medical Vehicles	LFs and MAFs	Other Varied Locations	6	4	24	6	4	24	20	0.0625	1.5	1.5
Heavy equipment transport	Truck	LFs and MAFs	LFs and MAFs	10	5	50	11	5	55	30	0.0625	3.125	3.4375
Earthwork dump trucks	Truck	LFs and MAFs	LFs and MAFs	7	4	28	7	4	28	60	0.0625	1.75	1.75
Water and fuel trucks	Truck	LFs and MAFs	Laydown Areas	5	8	40	5	8	40	20	0.0625	2.5	2.5
Concrete trucks	Truck	LFs and MAFs	Laydown Areas	17	3	51	17	3	51	45	0.0625	3.1875	3.1875

H.2 TOTAL NUMBER OF TRIPS - INDEPENDENT OF BASE

	Typical Operaions		Peak Operations	
Site	**Daily (vpd)**	**Peak Hour (vph)**	**Daily (vpd)**	**Peak Hour (vph)**
Workforce Hub	855	143.9	879	148.7
Hiring Center	2,008	302.6	2,708	407.6
Laydown Areas	255	15.9	255	15.9
Warehouse	32	2.0	32	2.0
Other Varied Locations	2,574	209.0	3,274	252.8
All MAFs	52	6.7	69	9.1
All LFs	653	78.8	670	81.9

H.3 NUMBER OF SITES FOR EACH BASE

	F.E. Warren AFB		Malmstrom AFB		Minot AFB	
	Typical	**Peak**	**Typical**	**Peak**	**Typical**	**Peak**
Workforce Hub	1	1	2	2	1	1
Hiring Center	1	1	1	1	1	1
Laydown Areas	2	4	4	8	3	7
Warehouse	1	1	1	1	1	1
Other Varied Locations	100	100	100	100	100	100
MAFs	2	3	2	3	2	3
LFs	30	36	30	36	30	36

H.4 F.E. WARREN AFB - NUMBER OF TRIPS PER SITE

	Typical Operaions		Peak Operations	
Site	**Daily (vpd)**	**Peak Hour (vph)**	**Daily (vpd)**	**Peak Hour (vph)**
Workforce Hub	855	143.9	879	148.7
Hiring Center	2,008	151.3	2,708	407.6
Individual Laydown Areas	128	15.9	64	4.0
Warehouse	32	0.0	32	2.0
Other Varied Locations	26	2.1	33	2.5
Individual MAFs	26	3.4	23	3.0
Individual LFs	22	2.6	19	2.3

H.5 MALMSTROM AFB - NUMBER OF TRIPS PER SITE

	Typical Operaions		Peak Operations	
Site	**Daily (vpd)**	**Peak Hour (vph)**	**Daily (vpd)**	**Peak Hour (vph)**
Workforce Hub	428	71.9	440	74.3
Hiring Center	2,008	302.6	2,708	407.6
Individual Laydown Areas	64	4.0	32	2.0
Warehouse	32	2.0	32	2.0
Other Varied Locations	26	2.1	33	2.5
Individual MAFs	26	3.4	23	3.0
Individual LFs	22	2.6	19	2.3

H.6 MINOT AFB - NUMBER OF TRIPS PER SITE

	Typical Operaions		Peak Operations	
Site	**Daily (vpd)**	**Peak Hour (vph)**	**Daily (vpd)**	**Peak Hour (vph)**
Workforce Hub	855	143.9	879	148.7
Hiring Center	2,008	302.6	2,708	407.6
Individual Laydown Areas	85	5.3	36	2.3
Warehouse	32	2.0	32	2.0
Other Varied Locations	26	2.1	33	2.5
Individual MAFs	26	3.4	23	3.0
Individual LFs	22	2.6	19	2.3

H.7 VEHICLE DATA FOR ALL INSTALLATIONS

Vehicles Per Day	**Busses**	**POVs**	**Trucks**	**Medical Vehicles**	**Total**
Workforce Hub	105	550	200	0	855
Hiring Center	8	2,000	0	0	2008
Laydown Areas	0	0	255	0	255
Warehouse	0	0	32	0	32
Other Varied Locations	0	2,550	0	24	2574
LFs and MAFs	102	0	579	24	705
Percent Vehicles Per Day	**Busses**	**POVs**	**Trucks**	**Medical Vehicles**	**Total**
Workforce Hub	12.3%	64.3%	23.4%	0.0%	100.0%
Hiring Center	0.4%	99.6%	0.0%	0.0%	100.0%
Laydown Areas	0.0%	0.0%	100.0%	0.0%	100.0%
Warehouse	0.0%	0.0%	100.0%	0.0%	100.0%
Other Varied Locations	0.0%	99.1%	0.0%	0.9%	100.0%
LFs and MAFs	14.5%	0.0%	82.1%	3.4%	100.0%

H.8 EXISTING CONDITIONS – F.E. WARREN AFB LEVEL OF SERVICE CALCULATIONS

Roadway	AADT	Percent Total	Number of Lanes	One-Way Peak Hour Volume (V) [vph]	Volume to Capacity Ration (V/C)	Estimated Level of Service (LOS)
I-25 at Missile Drive	10,609	16.3%	4	573	0.34	C
I-25 at Central Avenue	17,456	26.9%	4	943	0.55	D
I-25 at Randall Avenue	12,355	19.0%	4	667	0.39	D
I-80 at Route 222	14,671	22.6%	4	792	0.47	D
I-80 to I-25 N	3,864	5.9%	4	209	0.12	B
Route 210	5,071	7.8%	2	548	0.32	C
Route 222	935	1.4%	2	101	0.06	A

Notes:
Assumes K factor of 0.18 - 18% of traffic in peak hour.
Assumes D factor of 0.6 - 60% of traffic in primary direction.

Trip Generation			
Location	New Employees	Trips/Employee/Day	Additional Trips per Day
Base 1	350	6.09	2,132

H.9 PROPOSED ACTION – F.E. WARREN AFB LEVEL OF SERVICE CALCULATIONS

Roadway	AADT	Number of Lanes	One-Way Peak Hour Volume (V) [vph]	Volume to Capacity Ration (V/C)	Estimated Level of Service (LOS)
I-25 at Missile Drive	10,957	4	592	0.35	C
I-25 at Central Avenue	18,029	4	974	0.57	D
I-25 at Randall Avenue	12,760	4	689	0.41	D
I-80 at Route 222	15,152	4	818	0.48	D
I-80 to I-25 N	3,991	4	216	0.13	B
Route 210	5,237	2	566	0.33	C
Route 222	966	2	104	0.06	A

Source: WYDOT 2020.
Notes:
Assumes K factor of 0.18 - 18% of traffic in peak hour.
Assumes D factor of 0.6 - 60% of traffic in primary direction.
New trips are distributed based on percent traffic on each roadway.

H.10 EXISTING CONDITIONS – CAMP GUERNSEY LEVEL OF SERVICE CALCULATIONS

Roadway	AADT	Percent Total	Number of Lanes	One-Way Peak Hour Volume (V) [vph]	Volume to Capacity Ration (V/C)	Estimated Level of Service (LOS)
US Highway 26 at State Route 270	2,496	68.6%	4	135	0.08	A
State Route 270 north from US Highway 26	772	21.2%	4	42	0.02	A
State Route 270 north of Hartville	371	10.2%	4	20	0.01	A

Notes:
Assumes K factor of 0.18 - 18% of traffic in peak hour.
Assumes D factor of 0.6 - 60% of traffic in primary direction.

Trip Generation

Proposed Action: No changes in number of personnel and no trip generation changes

H.11 EXISTING CONDITIONS – MALMSTROM AFB LEVEL OF SERVICE CALCULATIONS

Roadway	AADT	Percent Total	Number of Lanes	One-Way Peak Hour Volume (V) [vph]	Volume to Capacity Ration (V/C)	Estimated Level of Service (LOS)
US Highway 87 at Convoy Gate	6,254	21.5%	4	338	0.20	B
US Highway 87 at 2nd Avenue N	10,294	35.5%	4	556	0.33	C
US Highway 87 at 10th Avenue N (North Gate)	6,237	21.5%	4	337	0.20	B
2nd Avenue N at Goddard Avenue (Main Gate)	6,245	21.5%	4	337	0.20	B

Notes:
Assumes K factor of 0.18 - 18% of traffic in peak hour.
Assumes D factor of 0.6 - 60% of traffic in primary direction.

Trip Generation			
Location	**New Employees**	**Trips/Employee/Day**	**Additional Trips per Day**
Base 1	**350**	**6.09**	**2,132**

H.12 PROPOSED ACTION – MALMSTROM AFB LEVEL OF SERVICE CALCULATIONS

Roadway	AADT	Number of Lanes	One-Way Peak Hour Volume (V) [vph]	Volume to Capacity Ration (V/C)	Estimated Level of Service (LOS)
US Highway 87 at Convoy Gate	6,713	4	363	0.21	B
US Highway 87 at 2nd Avenue N	11,050	4	597	0.35	C
US Highway 87 at 10th Avenue N (North Gate)	6,695	4	362	0.21	B
2nd Avenue N at Goddard Avenue (Main Gate)	6,704	4	362	0.21	B

Source: MDT 2020.
Notes:
Assumes K factor of 0.18 - 18% of traffic in peak hour.
Assumes D factor of 0.6 - 60% of traffic in primary direction.
New trips are distributed based on percent traffic on each roadway.

H.13 EXISTING CONDITIONS – MINOT AFB LEVEL OF SERVICE CALCULATIONS

Roadway	AADT	Percent Total	Number of Lanes	One-Way Peak Hour Volume (V) [vph]	Volume to Capacity Ration (V/C)	Estimated Level of Service (LOS)
US Highway 83 at Missile Avenue (Main Gate)	3,535	16.1%	4	191	0.11	A
Main Gate	8,120	37.0%	2	877	0.52	D
US Highway 83 at Bomber Blvd. (South Gate)	6,915	31.5%	4	373	0.22	B
South Gate	3,405	15.5%	2	368	0.22	B

Notes:
Assumes K factor of 0.18 - 18% of traffic in peak hour.
Assumes D factor of 0.6 - 60% of traffic in primary direction.

Trip Generation			
Location	**New Employees**	**Trips/Employee/Day**	**Additional Trips per Day**
Base 1	**350**	**6.09**	**2,132**

H.14 PROPOSED ACTION – MINOT AFB LEVEL OF SERVICE CALCULATIONS

Roadway	AADT	Number of Lanes	One-Way Peak Hour Volume (V) [vph]	Volume to Capacity Ration (V/C)	Estimated Level of Service (LOS)
US Highway 83 at Missile Avenue (Main Gate)	3,878	4	209	0.12	B
Main Gate	8,908	2	962	0.57	D
US Highway 83 at Bomber Blvd. (South Gate)	7,586	4	410	0.24	C
South Gate	3,735	2	403	0.24	B

Source: NDDOT 2020.
Notes:
Assumes K factor of 0.18 - 18% of traffic in peak hour.
Assumes D factor of 0.6 - 60% of traffic in primary direction.
New trips are distributed based on percent traffic on each roadway.

H.15 EXISTING CONDITIONS – HILL AFB LEVEL OF SERVICE CALCULATIONS

Roadway	AADT	Percent Total	Number of Lanes	One-Way Peak Hour Volume (V) [vph]	Volume to Capacity Ration (V/C)	Estimated Level of Service (LOS)
State Route 193 at I-15	30,000	16.9%	4	1,620	0.95	E
South Gate	24,000	13.6%	4	1,296	0.76	E
State Route 232 at I-15	45,000	25.4%	4	2,430	1.43	F
State Route 232/State Route 193 at South Gate	25,000	14.1%	4	1,350	0.79	E
Main Street West Gate	18,000	10.2%	4	972	0.57	D
State Route 97 at Roy Gate	35,000	19.8%	4	1,890	1.11	F

Notes:
Assumes K factor of 0.18 - 18% of traffic in peak hour.
Assumes D factor of 0.6 - 60% of traffic in primary direction.

Trip Generation			
Location	New Employees	Trips/Employee/Day	Additional Trips per Day
Base 1	278	6.09	1,693

H.16 PROPOSED ACTION – HILL AFB LEVEL OF SERVICE CALCULATIONS

Roadway	AADT	Number of Lanes	One-Way Peak Hour Volume (V) [vph]	Volume to Capacity Ration (V/C)	Estimated Level of Service (LOS)
State Route 193 at I-15	30,287	4	1,635	0.96	E
South Gate	24,230	4	1,308	0.77	E
State Route 232 at I-15	45,430	4	2,453	1.44	F
State Route 232/State Route 193 at South Gate	25,239	4	1,363	0.80	E
Main Street West Gate	18,172	4	981	0.58	D
State Route 97 at Roy Gate	35,335	4	1,908	1.12	F

Source: UDOT 2020.
Notes:
Assumes K factor of 0.18 - 18% of traffic in peak hour.
Assumes D factor of 0.6 - 60% of traffic in primary direction.
New trips are distributed based on percent traffic on each roadway.

This page intentionally left blank.