



# Hill Air Force Base, Utah

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## Hill Air Force Base, Utah

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### Proposed Final Environmental Assessment for the Space and Missile Facility

Contract No: F42650-03-0-0006  
Task Order: 001

March 2004

**PROPOSED FINAL  
ENVIRONMENTAL ASSESSMENT  
HILL AIR FORCE BASE  
SPACE & MISSILE FACILITY**

March 2004

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Prepared in accordance with the Department of Air Force Environmental Impact Analysis Process (EIAP) 32 CFR Part 989, Effective March 12, 2003, which implements the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) regulations.

## **Finding of No Significant Impact for the Hill Air Force Base Space and Missile Facility**

In order to address communication, efficiency, and security issues between the ICBM SPO, LH, and their off-base contractor support, Hill Air Force Base has proposed to construct a new Space and Missile Facility (SMF) that would house all of the associated groups on Hill Air Force Base at one of four potential location sites. While four potential sites have been identified, a preferred site has not been established at this time. This Environmental Assessment was prepared to analyze the environmental effects of the Proposed Action for each of the four potential SMF locations, and the No Action Alternative.

The proposed SMF would conceptually incorporate a “campus” office design that includes multiple two- to three-story buildings with 20,000 to 30,000 square foot floor plates. The total square footage of the facility would be approximately 350,000 to 450,000 square feet. The facility would house the ICBM SPO, LH, and Northrop Grumman (NG), Lockheed Martin, and Boeing; a total of about 2,000 Federal and contract employees.

Siting requirements for the SMF include: pavements must join those existing; parking shall be provided within ‘campus’ for 2,000 employees; location must be on the edge of Hill AFB boundaries for potential excise purposes; and compliance with all Anti-Terrorism/ Force Protection (AT/FP) regulations is required. In addition to the attached Environmental Assessment for the Hill Air Force Base Space & Missile Facility, other environmental documents pertaining to this action include Environmental Baseline Surveys (EBS) prepared by Bowen Collins & Associates (BCA) in January 2004 for each of the proposed sites, and the Environmental Assessment (EA) for the Propellant Lab (currently under revision).

### **Summary of Environmental Impacts**

Resources that do not occur in the area, or would not be affected by the proposed project include: wetlands, wildlife, T&E, geology, prime and unique farmlands, and environmental justice. Resources that have been analyzed in the EA include: surface water, ground water, soil, vegetation, land use, cultural resources, air quality, noise, health and safety, transportation, socioeconomics, solid and hazardous wastes, and CERCLA/IRP (Comprehensive Environmental Response, Compensation, & Liability Act)/(Installation Restoration Program) sites. As shown in the attached EA, all of the sites fit the siting criteria for the SMF. Overall, the sites are either currently developed or semi-developed. Although the sites differ in existing resources, none of the sites contain resources that would be significantly impacted by the construction of the SMF. A table comparing and summarizing impacts is included at the end of Section 4.0. The sites which require the most additional work in order to be cleared for site preparation and construction are the South Gate Site and the Museum Site.

## **Conclusions Leading to FONSI**

Based upon the analyses conducted for this EA, no resources were identified that would be significantly impacted by the construction of the SMF on Hill AFB, provided there is strict adherence to all applicable policies, procedures, and regulations. Therefore, in accordance with 32 CFR Part 989, a Finding of No Significant Impact may be issued, and the preparation of an Environmental Impact Statement (EIS) is not necessary.

## **Hill Air Force Base, Utah**

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*Authorized Signature*

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*Date*

## **Executive Summary**

In order to address communication, efficiency, and security issues between the ICBM (Intercontinental Ballistic Missile) SPO (Systems Program Office), LH, and their off-base contractor support, Northrop Grumman among others, Hill Air Force Base has proposed to construct a new Space and Missile Facility that would house all of the associated groups. The facility would consist of several buildings in a campus style arrangement, with associated parking areas.

Currently ICBM SPO and LH occupy ten buildings in the congested 1200 Area. Northrop Grumman is located off base to the south in Clearfield and contractors must travel to the base frequently. During higher security periods under AT/FP, there can be lengthy delays entering the Base. This situation has created a loss of continuity and efficiency. Frequent trips to the base add to traffic congestion in the 1200 Area.

Four possible site alternatives are considered in the Proposed Action. The Museum Site would be located in the 1900 Area at the existing Propellant Lab location. The South Gate Site would be located in the FAMCAMP area in the southern portion of the base. The DRMO Site would be located south of Building 891, west of Wardleigh Road. The Garden Site would be situated in the vicinity of the community garden plots area. All four sites are situated near the boundaries of the AFB in order to allow excise if needed.

The No Action Alternative was also evaluated and is anticipated to result in negative impacts to Hill AFB. Safety and security issues related to AT/FP measures and general AFB traffic congestion in the 1200 Area would not be resolved under No Action.

A summary of the impacts from the Proposed Action at each site and the No Action Alternative are presented in Table 2.3-1.

Following is a summary of processes at each site that would be required prior to initiating excavation, site preparation, and construction:

### ***Museum Site***

- Soil testing & potential remediation
- Coordination with Environmental Management Directorate prior to soil removal
- Potential EOD clearance based upon Defense Safety Board-approved Plan
- Asbestos and lead-based paint surveys & removal, if necessary, prior to demolition
- UST removal
- Historic structures mitigation per MOA
- Historic structures demolition
- Completion of Revised EA for Propellant Lab
- Construction of new Propellant Testing & Analysis Complex or having a plan for replacing functions of structures demolished
- Re-location of radar unit

### ***Garden Site***

- Soil testing/ possible remediation
- Historic railroad corridor documentation
- Section 106 Consultation with SHPO
- Re-location of garden plots
- Demolition of road segments; planning to adjust flow of traffic around site
- Asbestos & lead-based paint surveys and abatement, if necessary, in Building 1150
- Demolition of Building 1150

### ***DRMO Site***

- Soil testing/ possible remediation
- Asbestos & lead-based paint surveys and abatement, if necessary, in Building 899
- Demolition of Building 899
- Demolition of parking/storage area

### ***South Gate Site***

- NEPA process for relocation of community facilities
- Documentation and NRHP eligibility determination for Building 562
- Possible historic structure mitigation
- Demolition & relocation of existing facilities

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## List of Acronyms

ACCS	Accumulation Site
ADA	Americans with Disabilities Act
ADP	Area Development Plan
AFB	Air Force Base
AFI	Air Force Instruction
AFOSH	Air Force Occupational and Environmental Safety, Fire Protection and Health Program
AICUZ	Air Installation Compatible Use Zone
ALC	Air Logistics Center
AMA	Air Materiel Area
AQCR	Air Quality Control Region
AT/FP	Anti-Terrorism/Force Protection
BACT	Best Available Control Technology
bgs	below ground surface
BMP	Best Management Practice
CERCLA	Comprehensive Environmental Response, Compensation, & Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
DAQ	Department of Air Quality
DEPMEDS	Deployable Medical Systems
dB	Decibel
DRMO	Defense Re-utilization and Marketing Office
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EPA	Environmental Protection Agency
FONSI	Finding of No Significant Impact
GOPB	Governor's Office of Planning and Budget
HAP	Hazardous Air Pollutant
IAP	Initial Accumulation Point
ICBM	Intercontinental Ballistic Missile
IPIC	Prime Integration Contractors
IRP	Installation Restoration Program
LH	Space and C31 Directorate
LM	ICBM Systems Program Office (SPO)
MAJCOM	Major Command
MAMS	Missile and Munitions Storage
MOA	Memorandum of Agreement
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NG	Northrop Grumman
NLR	Noise Level Reduction
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWP	Nationwide Permit

## List of Acronyms (continued)

O <sub>3</sub>	Ozone
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PM <sub>10</sub>	Particulate Matter less than 10 Microns in Diameter
RCRA	Resource Conservation and Recovery Act
SAC	Strategic Air Command
SHPO	State Historic Preservation Office(r)
SMF	Space and Missile Facility
SO <sub>2</sub>	Sulfur Dioxide
SPO	Systems Program Office
T&E	Threatened and Endangered
tpy	Tons Per Year
UACR	Utah Air Conservation Rules
URS	URS Corporation
USAF	United States Air Force
UST	Underground Storage Tank
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound

## **1.0 Purpose and Need for the Proposed Action**

### **1.1 Introduction and Background**

Hill Air Force Base (AFB) is located north of Salt Lake City, Utah, and south of Ogden. It covers approximately 6,700 acres in an area between Interstate 15 (I-15) and Interstate 84, at the Davis County - Weber County interface (**Figure 1**). The mission of Hill AFB centers on the maintenance and management of aircraft and missiles.

The largest organization on Hill AFB is the Ogden Air Logistics Center (ALC); Ogden ALC is the host organization for Hill AFB and associated facilities within the Air Force Materiel Command (AFMC). Within the Ogden ALC, program offices are denoted as Directorates. OO-ALC/LM is the ICBM (Intercontinental Ballistic Missile) Systems Program Office (SPO) and is responsible for logistics management of the nation's fleet of intercontinental ballistic missiles. OO-ALC/LH, the Space and C<sup>3</sup>I Directorate, is responsible for the sustainment and acquisition of support for Space and C<sup>3</sup>I systems. C<sup>3</sup>I Systems are command, control, communications, and intelligence systems designed to enable cooperation within the U.S services and with allied forces by providing the most efficient and reliable technology for collection, transmission, storage, correlation and display of information required to ensure mission success and national security. In a nutshell, a strategic information life support system.

LM and LH, which include a total of 978 Federal employees, are currently housed in separate and small facilities in the 1200 Area of Hill AFB. Originally constructed in 1940-42 as munitions storage warehouses, the 1200 Area facilities were subsequently renovated for use as administrative offices and other support facilities. The entire 1200 Area is eligible for inclusion on the National Register of Historic Places (NRHP) as a portion of the Ogden Arsenal Historic District (See Section 3.6). Although most facilities have been renovated and updated (General Plan 2002), the older buildings carry increasing maintenance costs. Further, the 1200 Area is very congested due to the close proximity of the buildings and the design of the supporting parking. According to the Hill AFB General Plan, re-vitalization of the 1200 Area is planned for some point in the future, including phased demolition of existing structures while preserving representative examples of historic warehouse architecture, and new construction to modernize the office complex in the 1200 Area.

LM's main contractor, Northrop Grumman (NG), is located off base, to the south of Highway 193 in Clearfield, Utah. NG employees (approximately 750), as well as other contractors, currently must travel from the Clearfield structure to the Base for coordination and other necessary support work for the ICBM SPO.

Due to recently increased national security concerns, Hill AFB has implemented Anti-Terrorism/Force Protection (AT/FP) measures, which intensify the level of AFB security screening.

## **1.2 Purpose and Need for Proposed Action**

The Purpose and Need for the Proposed Action is to provide a facility in a location that meets the described siting criteria, to house LH, LM, and NG. LM and LH are currently located in 10 different buildings in the 1200 Area and NG is located off base in Clearfield, Utah. Each building in the 1200 Area houses approximately 100 people, causing constant transportation and parking problems. This situation has created a lack of continuity and constant vehicle traffic from building to building. Transportation between existing facilities, in conjunction with the on/off base traffic to the Clearfield Facility, will be increased due to the start-up activity associated with the new Minuteman IV workload. The off-base NG facility is currently being leased with a renewal date of October 2005.

The recent implementation of AT/FP measures has tightened the security clearance process at Hill AFB. These security measures cause lengthy delays for entering the base and various buildings throughout the base. Force Protection becomes a greater issue with LM, LH, and NG spread out, as is the current situation. Security would be more efficient if they were housed in one facility. Communication, security, and synergy would all be enhanced with the proposed facility.

## **1.3 Scope of the Environmental Review and Anticipated Environmental Issues**

This environmental review is being conducted to analyze environmental concerns related to construction of a new Space and Missile Facility on Hill Air Force Base at one of four potential locations.

Resources that do not occur in the area, or would not be affected by the proposed project include: wetlands, wildlife, threatened or endangered species, geology, prime and unique farmlands, and environmental justice. See Section 3.0 – Resources Eliminated From Further Study.

Resources that have been identified to carry forward in the analysis include: surface water, ground water, soil, vegetation, land use, cultural resources, air quality, noise, health and safety, transportation, socioeconomics, solid and hazardous wastes, and CERCLA/IRP sites. The environmental effects of the Proposed Action, for each of the four potential SMF locations, and the No Action Alternative were analyzed.

## **1.4 Applicable Environmental Requirements, Regulations, and Permits**

The National Environmental Policy Act of 1969 (NEPA) requires federal agencies to analyze potential environmental impacts of a proposed action and to evaluate reasonable alternative actions. The analysis is used in decision-making on whether to proceed and how to proceed. Implementing regulations for NEPA can be found in 40 Code of Federal Regulations (CFR) 1500.

As a result of this environmental analysis, it has been determined that an emissions impact analysis, a Title V air permit modification, and a fugitive dust plan must be completed and submitted. In addition, a Memorandum of Agreement (MOA) with the Utah State Historic Preservation Office (SHPO) must be completed prior to demolition and construction activities. This MOA has been signed and is included as Appendix B.

Air Force Instruction (AFI) 32-7061 directs the process of preparing an Environmental Assessment (EA) for Air Force projects. AFI 32-7061, as of 12 March 2003, has adopted 32 CFR Part 989, in its entirety, as the implementing document on the Air Force Environmental Impact Analysis Project (EIAP). This guidance was followed in preparing this document.

## **2.0 Description of the Proposed Action and Alternatives**

The Proposed Action is the construction of an administrative facility for government and contract employees at Hill Air Force Base at one of four potential location sites. A preferred site has not been established at this time.

### **2.1 Proposed Action and Selection Criteria**

The Proposed Action is described in the following paragraphs. A list of the Selection Criteria follows the description of the Proposed Action. Alternative sites for the Proposed Action are identified in Section 2.2.

The Proposed Action is the construction of a new administrative facility at Hill Air Force Base to house the ICBM SPO, LH, and NG; a total of about 2,000 Federal and contract employees. The proposed facility would conceptually incorporate a “campus” office design that includes multiple two- to three-story buildings with 20,000 to 30,000 square foot floor plates. Each building would have one floor below ground level.

The total square footage of the facility would be approximately 350,000 to 450,000 square feet. There would be adjacent parking, and a power substation. Each building would be a self-sustaining facility. The associated parking lot(s) would comply with the AT/FP Directive and consist of a single level (630,000 square feet), providing 2,000 stalls. The multi-storied facilities would be constructed with concrete foundations, steel frames, floor slabs, masonry walls, and standing seam metal. Administration, computer, and conference rooms would be included on each floor. The facility would also include a theatre, cafeteria, exercise room, and training areas. Green engineering standards would be met. The facility would provide all AT/FP measures and the necessary secret requirements (TEMPEST), for a new Minuteman IV weapons system, and Minuteman III sustainment.

The total surface area required for the proposed SMF including the buildings, parking areas, landscaping, AT/FP setback, and access roads is approximately 27 acres. In order to construct one level of the 350,00 to 450,000 square foot facility footprint below ground, approximately 130,000 to 167,000 bank cubic yards of soil would need to be removed from the site and contained elsewhere, or disposed of appropriately. Surface disturbance would be monitored and construction sites watered as necessary. Proper signs and notifications would be provided to the public of road closures, detours, and construction zones.

The proposed process for construction of a new Space and Missile Facility includes concept approval from the Office of Management and Budget; an Industry Forum for potential developers; Request for Proposals; and Source Selection. Actual site preparation work would not be expected to begin until at least August 2004.

The collocation of the ICBM Prime contractor with the ICBM System Program Office into a centralized facility would result in greater workplace synergy and cooperation.

Program integrity in terms of quality, planning, and implementation of management decisions would improve. Personnel safety and morale would be significantly enhanced. As a result, mission effectiveness would be greatly improved. The acquisition of leased space is intended to again collocate government and contractors (primarily Northrop Grumman, Lockheed Martin, and Boeing) associated with ICBM and other space and missile programs at Hill AFB.

The Proposed Action is a 30-year plus out-lease of up to 37 acres of base property to a private developer, selected by competitive bid. The successful developer would build, own, and manage an office facility on the leased land containing 360,000 square feet or more of floor space. Hill AFB intends to lease about 300,000 square feet of space to house about 1,300 of its employees and about 700 of its contractor personnel at an estimated annual cost of \$4.865 million plus utilities and services. This cost would be offset by in-kind consideration based on the fair market value of the land leased to the developer. It would be in the form of a partial rebate in the rent paid or some other mechanism, consistent with 10 USC 2667, as negotiated by the government and the developer. The developer, in addition, may lease available space to other government entities and contractors, or other organizations depending upon commercial real estate market conditions.

## **Selection Criteria**

The criteria for selection of the facility site are summarized below. These criteria must be met for a site to be considered as an alternative:

- Pavements shall join existing pavements and provide sufficient parking for 2,000 employees.
- The site must be large enough to accommodate the 350,000 to 450,000 square foot facility and the associated parking.
- The site is to be located on the edge of base boundaries for potential excise purposes.
- The facility shall comply with all AT/FP regulations.

## **2.2 Description of Alternatives**

In addition to the No Action Alternative, several sites were considered by the U.S. Air Force to address the need for construction of a new Space and Missile Facility. Two of these alternative sites were rejected for the reasons described below. Four other sites have been carried forth for analysis and consideration.

### **2.2.1 Alternative Sites Considered but Eliminated from Further Analysis**

The following sites were eliminated from further study.

#### ***Off-Base Facility***

An off-base facility housing both the IPIC contractors and the ICBM SPO personnel was evaluated and eliminated. Off-base sites are not being considered due to AT/FP

restrictions. Current and future program growth will require additional lease space for contractors; and the relocation of 978 Federal employees to a site off-base is not a feasible alternative. This alternative does not meet the siting criteria for the project because it would not incorporate the necessary AT/FP requirements. This alternative was therefore rejected from further analysis.

### ***East Side***

A site on the east side of the base was considered but rejected due to noise levels exceeding 80 dB associated with the existing runway in that area, and associated land use conflicts with the Air Installation Compatible Use Zone (AICUZ). According to AFI 32-7063, the AICUZ prevents incompatible development in areas of high aircraft noise and accident potential. The Clear Zone (at the ends of the runway) and Accident Potential Zones (beyond the Clear Zone) prohibit construction of the SMF in this area. This site would not comply with AFI 32-7063 and was therefore rejected from further analysis.

## **2.2.2 Alternative Sites Analyzed**

The alternative locations described below would satisfy all selection criteria outlined in Section 2.1. All necessary permits and clearances would be obtained prior to construction.

### ***2.2.2.1 Museum Site Alternative***

This alternative site is located in the northern portion of Hill Air Force Base near the Roy Gate and the existing Hill Aerospace Museum (**Figure 2**). The site is currently occupied by several aging buildings, which house the Propellant Test and Analysis Facility (Propellant Lab), slated to be moved to an expanded proposed facility (URS 2001).

Under this alternative, the existing Propellant Lab, located in the 1900 Area, would have to be demolished ahead of the schedule (fiscal year 2006) established in the Proposed Final Propellant Lab EA (2001). Buildings 1932, 1935, 1940, 1940B, 1941, 1944, 1945, 1946, 1947, 1948, 1950, 1951 and 2717 are located within the proposed footprint of the facility at the Museum Site. All of these except building 2717 (a portable trailer) would be demolished. Due to the eligibility of several of these buildings for the National Register of Historic Places, an MOA with the SHPO would need to be in place establishing mitigation requirements prior to demolition of these structures. This MOA completed by Hill AFB has been signed by the SHPO.

Access to the Museum Site would be via the newly reconfigured Roy Gate and North Drive off of Wardleigh Road. The portable radar unit associated with the 729<sup>th</sup> aircraft operations area would be relocated.

### ***2.2.2.2 South Gate Site Alternative***

Under the South Gate Alternative, the proposed facility would be sited along the south fence line of Hill AFB to the west of Southgate Drive and south of 11<sup>th</sup> Street (**Figure 3**).

Access would be via the South Gate and 11<sup>th</sup> Street. The parking lot would be located west of the facility.

Existing facilities on this site, which would require relocation, include the Par Course Track, Centennial Park, FAMCAMP, soccer fields, and buildings 544, 561, 563, and 564. The relocation of these facilities would entail additional NEPA analysis prior to construction activities at this site. New recreational facilities would be developed in the Community Center area to provide RV parking and outdoor recreation and gathering areas.

SMF placement at this site would have to be designed around the power substation (Building 562) and power line, as well as the pump house and generator house (Buildings 560 and 565) for the Weber Basin water line. These existing facilities would not be relocated. Existing monitoring wells would need to be relocated.

#### **2.2.2.3 DRMO Site Alternative**

This alternative site is located along the western fence line of Hill Air Force Base, south of Building 891 in the area west of Wardleigh Road (**Figure 4**). A storage yard/parking area currently occupies the site. The potential exists for contact with contaminated soil during excavation beneath the DRMO (Defense Reutilization and Marketing Office) site; such soil would have to be removed and disposed of accordingly. Access to the DRMO site would be via the West Gate and an existing road along the west fence line.

#### **2.2.2.4 Garden Site Alternative**

This alternative site is also located along the western fence line in the northern half of Hill Air Force Base, north of Building 1102 along Aspen Avenue (**Figure 5**). The site currently is the Base Garden area. It also has a rail track that bisects the site. There would be poor access to the site if it were to be excised. This location provides enough surface area for both the facility and the associated parking. Access to this Site would be via the West Gate and an existing road along the west fence line or through the Roy Gate. New garden plots would be designated for AFB community use in a different area of the Base.

#### **2.2.3 No Action Alternative**

Under the No Action Alternative, the SMF construction would not be authorized at this time. The ICBM SPO prime contract support, Northrop Grumman, would remain in its current location off base in Clearfield, Utah. The 1200 Area buildings would continue to be utilized for the ICBM SPO and LH. Under the Hill AFB General Plan, the 1200 Area would be re-vitalized at some point in the future.

Maintenance concerns (i.e. electrical, heating/cooling, etc) due to aging would continue to increase for the 1200 Area buildings that currently house LM and LH personnel. Security, coordination, and communications issues would remain as major concerns for LM, LH, and contractor support operations.

## 2.3 Summary of Impacts

Table 2.3-1. Comparison of Alternatives

Resource	Proposed Action				No Action
	Museum Site	Garden Site	DRMO Site	South Gate Site	
Surface Water	-Increased volume of storm water to the storm drain systems; retention capacity needs to be reviewed -Construction impacts mitigated with BMPs	-Increased volume of storm water to the storm drain systems; possible impacts to retention pond for DEPMEDS; new pond would need to be constructed -Construction impacts mitigated with BMPs	-Increased volume of storm water to the storm drain systems; retention capacity needs to be reviewed -Construction impacts mitigated with BMPs	-Increased volume of storm water to the storm drain systems; need to increase capacity -Construction impacts mitigated with BMPs	No Impact
Ground Water	-Do not disturb remediation at OU6	No Impact	No Impact	-Do not disturb remediation at OU8	- Continual monitoring and storm water concerns on base
Soils	- Excavation & removal of 130,000 to 167,00 bank cubic yards of soil; some may be contaminated - Disturbed soils subject to wind erosion	- Excavation & removal of 130,000 to 167,00 bank cubic yards of soil; some may be contaminated - Disturbed soils subject to wind erosion	- Excavation & removal of 130,000 to 167,00 bank cubic yards of soil; some may be contaminated - Disturbed soils subject to wind erosion	- Excavation & removal of 130,000 to 167,00 bank cubic yards of soil; not expected to be contaminated - Disturbed soils subject to wind erosion	No Impact
Vegetation	- Removal of low shrub/weedy vegetation on portions of site - Addition of developed landscape or "Green Space"	- Removal of grass/weed vegetation on portion of site - Loss of garden plots - Addition of developed landscape or "Green Space"	- Addition of developed landscape or "Green Space"	- Loss of grassy turf areas and established evergreen & deciduous trees in camp area - Addition of developed landscape or "Green Space"	No Impact
Land Use	- Change from Industrial to Administrative; - Remove ECZ with relocation of Propellant Lab	- Change from Open Space/ Outdoor Recreation/ Industrial to Administrative - Possible encroachment on Clinton City municipal land easement	- Change from Community Commercial to Administrative	- Change from Outdoor Recreation to Administrative	No Impact
Cultural Resources	-Demolition of 10 Historic buildings	- Possible impacts to historic railroad corridor	- No Impact	- Possible impacts to historic structure (562)	No Impact

Resource	Proposed Action				No Action
	Museum Site	Garden Site	DRMO Site	South Gate Site	
Air Quality	-Fugitive dust control plan required -Air permit modification required -Emissions <i>de minimus</i> – Federal Conformity Analysis not required	-Fugitive dust control plan required -Air permit modification required -Emissions <i>de minimus</i> – Federal Conformity Analysis not required	-Fugitive dust control plan required -Air permit modification required -Emissions <i>de minimus</i> – Federal Conformity Analysis not required	-Fugitive dust control plan required -Air permit modification required -Emissions <i>de minimus</i> – Federal Conformity Analysis not required	No Impact
Noise	- Located below the 65 dB NOISEMAP contour line; - Potential construction-related noise disturbance to Museum-goers	-Located below the 65 dB NOISEMAP contour line	-Located below the 65 dB NOISEMAP contour line	-Located between the 75 and 80 dB NOISEMAP contour lines; noise level reduction measures needed	No impact
Health & Safety	-Possible transportation detours and delays during construction - Electromagnetic radiation zone present in NE portion of site - Unexploded ordnance possible on site	-Possible transportation detours and delays during construction	-Possible transportation detours and delays during construction	-Possible transportation detours and delays during construction - Higher noise levels present (see above)	AT/FP issues unresolved for ICBM SPO support
Transportation	- Road system amended for access to SMF - Increase of 700 people/vehicles entering base per day - Likely increase in traffic entering Roy Gate - Decrease in 1200 Area traffic	- Road system amended for access to SMF - Increase of 700 people/vehicles entering base per day - Additional traffic congestion expected at railroad crossings - Decrease in 1200 Area traffic	- Road system amended for access to SMF - Increase of 700 people/vehicles entering base per day - Additional traffic congestion expected in South Gate area - Decrease in 1200 Area traffic	- Road system amended for access to SMF - Increase of 700 people/vehicles entering base per day - Additional traffic congestion in South Gate area - Decrease in 1200 Area traffic	- Continued periodic traffic delays at South Gate and West Gate - Continued traffic congestion in 1200 Area

Resource	Proposed Action				No Action
	Museum Site	Garden Site	DRMO Site	South Gate Site	
Socioeconomics	-Short term revenue to local contractors -Potential traffic delays/inconvenience	-Short term revenue to local contractors -Potential traffic delays/inconvenience	-Short term revenue to local contractors -Potential traffic delays/inconvenience	-Short term revenue to local contractors -Some community areas (i.e. FAMCAMP, Centennial Park) unavailable during interim period -Potential traffic delays/inconvenience	Hill AFB would incur costs for needed capital improvements to existing facilities
Solid and Hazardous Waste	- Potential need for EOD clearance; removal of asbestos & lead-based paint; and soil testing/ remediation	- Testing for asbestos & lead-based paint in Building 1150 & possible abatement	- Permit Modifications Required - Testing for asbestos & lead-based paint in Building 899 & possible abatement	-No Impact	No Impact
CERCLA/IRP Sites	- Need for UST removal - Soil testing & possible remediation - Two monitoring sites would need to be removed - Do not disturb remediation at OU6	- Soil testing and possible remediation (near OU 9)	- Soil testing and possible remediation (near OU 5)	- Do not disturb remediation at OU8	No impact
Processes Identified for Completion prior to Construction Site Preparation	-Soil testing/ remediation -UST removal -EOD clearance -Revised Propellant Lab EA completion and approval -Historic structures mitigation -Historic structures demolition	-Soil testing/ possible remediation -Historic railroad corridor documentation and possible mitigation -Planning for re-location of garden plots -Planning to adjust traffic flow around site; demolition of road segments - Testing for asbestos & lead-based paint in Building 1150/ possible abatement - Demolition of Building 1150	-Soil testing/ possible remediation -Demolition of parking/ storage area -Testing for asbestos & lead-based paint in Building 899/ possible abatement  -Demolition of Building 899	-NEPA process for relocation of community facilities -Documentation & NRHP eligibility determination for Building 562 -Demolition of existing facilities	None

## 3.0 Affected Environment

### Resources Eliminated from Further Study

The following resources would not be affected by the proposed project and are not carried forward for analysis:

**Wetlands:** There are approximately 20 acres of wetlands at Hill AFB. These wetlands are not within or near the four proposed SMF site locations. Wetlands would not be affected by the proposed project.

**Wildlife:** Hill AFB is a disturbed area with limited areas of natural habitat. No critical wildlife habitat is included in the proposed SMF sites. Wildlife would not be impacted by the proposed project.

**Threatened and Endangered Species:** There are no known threatened or endangered (T&E) species inhabiting Hill AFB (General Plan 2002). There is no critical or important habitat present. T&E species would not be affected by the proposed project.

**Geology:** Hill AFB is located on a delta created by the flow of the Weber River into ancient Lake Bonneville. Hill AFB is located near one end of a triangular area that has experienced no major seismic activity in over 100 years and is considered relatively stable (General Plan 2002). Geologic features on base do not constrain development. Geology would not be affected by the proposed project.

**Prime and Unique Farmlands:** According to the Hill AFB General Plan and the Natural Resources Conservation Service (NRCS), the Timpanogos fine sandy loam is the only soil in the area considered to be prime farmland, when irrigated. The lands on Hill AFB of this soil type are not available for agricultural use and none of the four proposed SMF sites occur on this soil type. No prime and unique farmlands would be affected by this proposed project.

**Environmental Justice:** Although the civilian workforce on the base will increase by 700, these persons are already present in the communities off base and are currently employed as contractors to Hill AFB. There is no expected change in the demographic profile of any minority group within the region. No minority or low-income population would carry undue burden of environmental risk as a result of the proposed project.

### 3.1 Surface Water

Hill AFB is located in the Weber River basin, west of the Weber River and east of the Great Salt Lake, in an area known as the East Shore. Located on an ancient delta feature, topography at Hill AFB slopes generally westward. Precipitation averages approximately 20 inches per year.

Within the bounds of Hill AFB, there are no significant natural surface water features such as streams or lakes. Soils are quite sandy and typically well drained, and

topography is gentle or moderate, so runoff is reduced due to substantial infiltration of precipitation.

Throughout Hill AFB, storm water runoff is controlled with a network of underground storm drains, open ditches, and retention ponds. Each of the four potential SMF site areas and the 1200 Area is currently served by a storm drain/pond network: Museum Site – Pond 11; Garden Site – Pond 8; DRMO Site – Pond 6; and South Gate Site – Pond 3. The Garden Site includes a storm water retention pond that services the DEPMEDS warehouse facility to the east. Drainage in the 1200 Area flows westward, off base to Fife's Ditch. In general, the HAFB storm water runoff system is designed to handle runoff from storms up to a 25-year event.

### **3.2 Ground Water**

Groundwater in the area is within the Weber Delta system of the East Shore area, which is comprised of variously sized basin deposits. There are two deep, confined groundwater systems in the Weber Delta system - the Sunset aquifer and the Delta aquifer. The Sunset aquifer occurs about 300 feet below ground surface (bgs), while the Delta aquifer occurs about 600 feet bgs. Much of Hill AFB's water supply comes from on-base water supply wells completed in the Delta aquifer. The water-bearing zone in that aquifer is approximately 50- to 100-foot thick, and horizontal movement is generally westward. The delta upon which Hill AFB sits is considered a secondary recharge area for the groundwater system, while primary recharge occurs on the Wasatch Range to the east (Clark et al., 1990).

Shallow, perched groundwater is also found locally at Hill AFB. Some of the water became contaminated during past operations at Hill AFB and remedial actions are underway or are being planned for some of these contaminated areas, defined by Hill AFB as Operable Units (OU). Further detail on identified areas of contamination is provided in Section 3.13.

### **3.3 Soils**

Hill AFB is located on the southwest portion of the Weber Delta District, a large Pleistocene delta associated with Prehistoric Lake Bonneville. Surface soils at Hill AFB are sand, gravel, silts, and clays typical of the Weber Delta District. According to the NRCS and Hill AFB General Plan, soils on the AFB are generally well suited to construction because of the good bearing value. However, due to the extent of expansive soils, spread footing is the most typical foundation type (General Plan 2002). Soils of Hill AFB are shown on **Figure 6**.

The history of uses and variety of activities on Hill AFB has led to areas of soil contamination. Some of these areas are more well-defined than others. See Section 3.13.

### Museum Site

Soils underlying the Museum Site include Francis loamy fine sand, 0-2 % slopes, on the northern tip of Hill AFB; and Bingham gravelly sandy loam, 0-2% slopes through the remainder of the 1900 Area. Francis loamy fine sand is a highly permeable soil, with a low water holding capacity and a high hazard for wind erosion if plant cover is removed (URS 2001). Bingham gravelly sandy loam is characterized as semi-permeable, fairly droughty, and good for development purposes.

### South Gate Site

The South Gate Site is underlain by Francis loamy fine sand, 0-2% slopes, as described above.

### DRMO Site

Soils at this site are Francis loamy fine sand (2-10%), as described for the Museum Site.

### Garden Site

Soils underlying the Garden Site include Francis loamy fine sand (0-2%) as described for the Museum Site, and Kilburn gravelly sandy loam (2-8%). The Kilburn soil is extremely permeable and has a high potential for wind erosion. Contaminated soil areas may be encountered under portions of the Garden Site

## **3.4 Vegetation**

Hill AFB is located on a broad plateau between the Great Salt Lake on the west and the Wasatch Mountains on the east at approximately 4,850 feet elevation. The typical vegetation of the area is mountain brush, which in undisturbed areas may include plants such as scrub oak (*Quercus gambellii*), big sagebrush (*Artemisia tridentata*), rabbitbrush (*Chrysothamnus* sp.), and western wheatgrass (*Agropyron smithii*). Few undisturbed areas remain on the AFB. Disturbed and developed areas on Hill AFB may contain landscape shrubs/trees/lawn, seeded grasses, as well as introduced and weedy species – cheat grass (*Bromus tectorum*) and sunflowers (*Helianthus* sp.).

Hill AFB lands are generally managed according to categories of Unimproved, Semi-Improved, and Improved lands. Unimproved areas require little or no maintenance and occur only in the limited undeveloped areas of the AFB. Semi-improved sites are generally close to runways, roads, and test & training sites. These areas are periodically mowed as a vegetation, fire, and pest control measure. Improved lands are those developed for housing, recreation, and other building projects; these areas are expected to be landscaped and intensively maintained (General Plan 2002).

The 1200 Area is occupied by buildings and roads. According the 1200 Area ADP (Area Development Plan), very little landscaping occurs in this area, and it is generally not maintained (General Plan 202).

### Museum Site

The Museum Site is currently occupied by several buildings, vegetated soil berms, and portions of open space. Vegetation consists of low shrubs and grasses, including rabbitbrush, gumweed (*Grindelia squarrosa*), *Astragalus* sp., and cheatgrass. The area has been characterized as containing Improved and Semi-improved lands; however little landscaping exists in this area and minimal maintenance is needed.

### South Gate Site

Vegetation at the South Gate Site is predominantly landscape plants and trees in the Recreational Vehicle (RV) parking area, turf at the soccer field, and grass/trees in Centennial Park. A combination of evergreen and deciduous trees lines the FAMCAMP. Weeds are also present as would be expected, along the edges of parking areas and roadways. This area contains Improved and Semi-improved lands. The major turf grass type is Kentucky bluegrass (*Poa pratensis*).

### DRMO Site

This site has limited vegetation – mainly weedy plants along parking areas and storage lots (Semi-improved).

### Garden Site

This site contains seven acres set aside as garden plots on the western boundary of the AFB. The plots contain various seasonal plantings as well as weeds. The majority of the Garden Site is an open weedy field (Semi-improved) containing cheatgrass and ragweed (*Ambrosia psilotac*), which is periodically mowed. The site also contains a few scattered elm trees.

## **3.5 Land Use**

Land use at Hill AFB is designated according to the predominant function of a given area (**Figure 7**). Land uses have varying levels of compatibility with each other; functional associations and/or environmental constraints are considered in the planning process for development on the AFB.

Additional principles that guide facility development on Hill AFB include: Right-Sizing, which balances infrastructure with mission and people; Force Protection, which provides guidelines for security measures designed to protect personnel, facilities, and equipment; the Facility Development Plan, which integrates these requirements with Facilities Board priorities and other considerations; Urban Design; Area Development Plans; Housing Community Plan; and Quality of Life (General Plan 2002).

Design and development of the SMF would occur in concert with the above-listed principles and guidelines for facility development on Hill AFB.

### Museum Site

The Museum Site is located north of the Davis County/Weber County line and north of the designated MAMS Area. It is in an Industrial area of the base. Land use to the northeast of this site is designated for Aircraft Operations; to the west is Community Commercial including the Hill Aerospace Museum. According to the General Plan Composite Utilities Map, electrical, sewer, and water lines are present within this site.

### South Gate Site

According to the Hill AFB General Plan, the South Gate Site is within a designated Community Center Area of approximately 174 acres. This Community Center includes a variety of facilities for community activities. The goal of the Community Center Area Development Plan (ADP) is to provide grouped, accessible community facilities in an efficient arrangement including parking and walkways. The land use at the South Gate Site is categorized as Outdoor Recreation. This area currently includes ball fields and the FAMCAMP (Family Camp), which is heavily used during the travel season (General Plan 2002). The FAMCAMP is considered a Class I Outdoor Recreation Area. The Class I designation applies to areas "suitable for intensive recreational activities such as camping, winter sports, and water sports."

Adjacent land use designations within the Community Center Area include Medical to the west of the South Gate Site, and Outdoor Recreation and Community Service to the north. Outside the Community Center Area to the east is Open Space; and to the south is the base boundary and mixed commercial/residential.

According to the General Plan Composite Utilities Map, three electrical lines, a natural gas line, sewer line, storm water line, and water line are present within this site.

### DRMO Site

This site is located in an Industrial area of the AFB, with a portion of the site between the Industrial area and Wardleigh Road designated as Community Commercial. The industrial area includes a fuel farm, industrial storage, the DRMO, and associated offices. The site borders the AFB's Main Family Housing Area to the southeast. The AFB boundary fence forms the southwest side of the DRMO Site; land use beyond this is a transportation corridor and mixed residential/commercial. Infrastructure at this site includes water, natural gas, sewer, and storm water lines.

### Garden Site

Land use designations at this site include Open Space, Outdoor Recreation, and Industrial. The Open Space includes seven acres set aside for individual garden plots. The Industrial Area includes railroad tracks and an area previously utilized informally as a construction debris landfill area. A portion of the Garden Site is used as a retention pond for runoff from the medical storage facility. The area north of Maine Street is designated as Outdoor Recreation. The Garden Site borders on the AFB west fence; land use beyond this is a transportation corridor and mixed residential/commercial. Infrastructure present in this area includes a natural gas line, water line, and sewer line.

The 1200 Area, which includes the Garden Site, is designated in the General Plan as an Opportunity Area – available for infilling/redevelopment.

There is a land tract easement on the north edge of this site area for the Clinton City municipal water system. A number of these easements on Hill AFB are granted for various nearby cities' reservoirs and associated pipelines.

### **3.6 Cultural Resources**

Cultural resources are defined as any prehistoric or historic district, site, building, structure, place, or object considered important to a culture, subculture, or community for scientific, traditional, or religious reasons.

Cultural resources can be divided into three basic categories: archaeological, architectural, and traditional cultural properties. Archaeological resources are areas where prehistoric and historic activities measurably altered the earth (for example, pit houses, hearths) or physical remains were deposited (for example, projectile points, pottery, cans, bottles). Architectural resources include standing buildings, dams, canals, bridges, or other structures. In general, architectural resources must be at least 50 years old to be considered eligible for inclusion in the NRHP. Structures less than 50 years old may warrant inclusion in the NRHP if they are exceptionally significant or have the potential to gain future significance (for example, Cold War era structures). Traditional resources are those associated with cultural practices and beliefs of a living community that are rooted in its history and are important in maintaining the continuing cultural identity of the community.

The National Historic Preservation Act, Section 106 (36 CFR 800), and AFI 32-7065 require the Air Force to protect historic properties. Currently, there are no NRHP listed properties on Hill AFB. Over three hundred eligible and potentially eligible historic architectural resources have been identified within Hill AFB (HAFB Cultural Resources Preservation Office). The majority of these structures date to the late 1930s and early 1940s and also include Cold War properties. There are three proposed NRHP districts: the Ogden Arsenal/Ogden Air Materiel Area (AMA) Historic District, the Hill Field Historic Housing District, and the Strategic Air Command (SAC) Alert Historic District.

Isolated prehistoric artifacts have been recorded on Hill AFB, but no prehistoric archaeological sites have been documented. No Traditional Cultural Properties have been identified at Hill AFB.

Many of the buildings comprising the 1200 Area were constructed between 1940-42. Some of the 1200 Area is eligible for the NRHP as contributing to the Ogden Arsenal/Ogden AMA Historic District, which exemplifies warehouse architecture of the Second World War.

### Museum Site

This site is within the proposed Ogden Arsenal/Ogden AMA Historic District; the space is currently occupied by the Propellant Lab. The buildings comprising the Propellant Lab complex were constructed in the 1940s during the Ogden Arsenal expansion period. Ten of the twelve buildings at the Propellant Lab complex (1932, 1941, 1943, 1944, 1945, 1946, 1948, 1949, 1950, and 1952) have been determined eligible for the NRHP. These historic properties are scheduled for demolition as part of the Propellant Lab relocation project (URS 2001). The buildings have been cleared for demolition and are included in a MOA.

### South Gate Site

This site is not within a proposed historic district. One historic structure within this proposed site, Building 562 (Electric Switch Station), requires further evaluation.

### DRMO Site

This site is not within a proposed historic district. There are no eligible historic structures within the DRMO Site. One historic structure is located in this area; Building 899 (radio relay facility) built in 1943, was recommended as ineligible for the NRHP during the 2003 building reassessment based on the lack of historical significance.

### Garden Site

This site is within the proposed Ogden Arsenal/Ogden AMA Historic District. One structure is located in this area; Building 1150 (utility vault) built in 1966, was recommended as ineligible for the NRHP during the 2003 building reassessment due to a lack of exceptional significance during the Cold War. One eligible historic property is located nearby, building #1701 (Railroad Shop). The historic railroad corridor that traverses through the area has not yet been recorded or evaluated.

## **3.7 Air Quality**

Hill AFB, located in Davis and Weber County, Utah, is designated as a maintenance area for ozone (O<sub>3</sub>). Ogden City, located directly to the north, is designated as non-attainment for particulate matter less than 10 microns (PM<sub>10</sub>) in diameter and a maintenance area for carbon monoxide (CO). Hill AFB is located in the Wasatch Front Intrastate Air Quality Control Region (AQCR) 220.

Major source status has been assigned to Hill AFB, which received its' Part 70 (Title V) Permit on October 25, 2002. Hill AFB is major emitter of PM<sub>10</sub>, nitrogen oxides (NO<sub>x</sub>), CO, volatile organic compounds (VOCs), and hazardous air pollutants (HAPs). The estimated criteria pollutant emissions are approximately 628 tons per year (tpy). Hill AFB is subject to the following Federal regulations: 40 CFR 60 Subparts A, Dc, and Kb; 40 CFR 63 Subparts A, N, T and GG; and 40 CFR 82 Subparts B and F.

## Requirements

Activities that disturb more than one half acre during construction, land clearing, or general construction located within Davis County are required to operate within a “fugitive dust control plan” that includes measures to minimize fugitive dust generation (See Utah Air Conservation Rules (UACR) 307-309). Fugitive dust from any source shall not exceed 15 percent opacity or 10 percent opacity at the property boundary. Dust suppression includes water trucks and sprays, chemical stabilization and re-vegetation.

The heat source for the facility would likely be from the on-site steam plant, natural gas-fired boiler, or several natural gas-fired furnaces.

The Proposed Action would be within the boundaries of a major source and an air quality maintenance area. The Proposed Action includes construction of a new parking area that would be greater than 600 stalls. Based on these criteria, this is a non-exempt activity. An emissions impact analysis (See UACR 307-413-4 (5)) and permit modification would likely be required.

Air dispersion modeling analysis would be required if the Proposed Action exceeds the following annual emission levels:

**Table 3.7-1 Air Dispersion Modeling Thresholds**

<b>Pollutant</b>	<b>Emissions in tpy</b>
VOC	25
CO	100
NO <sub>2</sub>	40
PM <sub>10</sub> , Non-fugitive emissions	15
PM <sub>10</sub> , Fugitive emissions	5
SO <sub>2</sub>	40
Offset (combined NO <sub>x</sub> , SO <sub>2</sub> , and PM <sub>10</sub> )	25

This federal facility is located in a designated “maintenance” area for CO; any actions at Hill AFB must undergo review in accordance with the Federal Conformity Rule (40 CFR 93.153). For any maintenance areas designation, NO<sub>x</sub> and SO<sub>2</sub> cannot exceed 100 tpy. For ozone maintenance areas outside of ozone transportation zones, the sum of NO<sub>x</sub> and VOC cannot exceed 100 tpy. For CO maintenance areas, projects cannot result in 100 tpy increases. If qualified emission estimates from the Proposed Action are less than these values, the emissions are considered *de minimus* under 40 CFR 93.153.

## 3.8 Noise

Noise at Hill AFB is created by aircraft, large transportation vehicular traffic, maintenance activities, logistical activities, supporting operations, and personnel vehicular transportation. Noise contours are modeled for aircraft operations (General Plan 2002) in order to site noise sensitive functions on the AFB. Maximum mission

noise contours have been mapped for this purpose (NOISEMAP). According to the General Plan (2002), residential, commercial, and recreational activities have varying sensitivities to noise levels, as such residential uses are not recommended in areas with noise levels above 65 decibels (dB), without noise level reduction (NLR).

The 1200 Area is below the 65 dB noise contour. All sites other than the South Gate Site are in areas below the 65 dB noise contour. According to the General Plan NOISEMAP, the South Gate Site is between the 75 and 80 dB noise contours.

### **3.9 Health and Safety**

Health and safety on the AFB are regulated by the Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program (AFI-91-301), OSHA, and traffic safety requirements.

Possible concerns on the AFB are radiation, aircraft, munitions, noise, air, and water quality. Noise is discussed in Section 3.8. Air quality is discussed in Section 3.7.

Electromagnetic safety zones are required within 750 feet of radar antennae and satellite dishes. All sites other than the Museum Site are distant from electromagnetic safety zones.

Explosive clear zones (ECZ) are safety zones around activities that handle, test, or store explosive materials. ECZ include areas mainly in the Industrial central portion of Hill AFB. The 1200 Area and all sites other than the Museum Site are located outside of ECZ. All community and administrative activities are restricted to specific areas of the AFB.

#### Museum Site

The 1900 Area, which includes the Museum Site, is located within an ECZ. Upon re-location of the Propellant Lab complex, the ECZ would no longer exist in this area. The northeast portion of the Museum Site is within the established electromagnetic radiation safety zone for the aircraft operations area adjacent to the site on the east side.

Additionally, this area is suspect for explosives due to the history of use and activities in the 1900 Area. According to the Explosives Safety Office, USAF Manual 91-201 dictates that in order to turn a property over to commercial use, the property must be ensured to be free of explosives and old ordnance. In addition, Department of Defense Manual 6065.9 requires specific safety standards that would apply to this property conversion.

### **3.10 Transportation**

In general, access to Hill AFB is by I-15 that runs north-south adjacent to the western boundary of the AFB. Highway 193 runs east-west along the south side of the southern boundary of the base. Highways 60 and I-84 parallel the eastern edge of the base. Highway 26 crosses I-15 to the north of the base. There are four gates at Hill AFB:

South Gate, Southwest Gate, West Gate, and Roy Gate. Internal roadways on Hill AFB are well established and include arterial and collector routes.

The main arterials through the base are Wardleigh Road, 6<sup>th</sup> Street, 11<sup>th</sup> Street, 12<sup>th</sup> Street, and Southgate Drive. Wardleigh Road connects to 5600 S Street and I-15 at Roy Gate. M Avenue and Wardleigh Road connect to 1800 N Street and I-15 at the West Gate. Southgate Drive connects to Highway 193 at the South Gate; I-15 is accessible to the west and US Highway 89 to the east. The local and regional transportation networks adequately support Hill AFB (General Plan 2002).

The latest on-base traffic studies (General Plan 2002) indicate that about 43 percent of base traffic enters and exits through the South Gate. The West Gate carries 38 percent of the traffic volume. The Southwest Gate carries 11 percent and Roy Gate 7 percent of base traffic.

Most of the traffic volume, about 70 percent, enters the base between the hours of 0600-0700 and exits between 1530-1615. The south base area is the main destination area. The 1200 Area is also heavily trafficked. According to the traffic study (General Plan 2002), almost half of vehicles entering the West Gate proceed to the south base area. Most of the vehicles entering the base from the Roy Gate proceed to the 1200 Area. Vehicles entering either the South Gate or Southwest Gate mostly remain in the south base area.

In-bound traffic can back-up at times, affecting surrounding communities, especially during periods of increased force protection measures. The South Gate traffic can back up to about one mile south of the AFB on Hill Field Road and can also extend east to Highway 89. West Gate traffic backs up on I-15.

On-base traffic is distributed from the arterial roads to the collector roads, which include New Jersey Drive, Browning Avenue, M Avenue, E Avenue, and Foulois Road. Collector roads distribute traffic to the local roads and destinations.

According to the General Plan (2002), the South Gate and West Gate are stressed during morning and evening peak hour work shift changes. Entering or departing the 1200 Area poses great traffic problems.

The Transportation Plan (General Plan 2002) generally discusses improving traffic flow between the West Gate and the 1200 Area, the Southgate Drive-6<sup>th</sup> Street-Wardleigh Road connection, and a proposed new gate near the southeast corner of the base to relieve South Gate congestion. The Land Use Plan (General Plan 2002) for the 1200 Area notes that development planning must emphasize traffic considerations.

The 1200 Area, where the current LM and LH facilities are located, is highly congested due to the close proximity of the buildings and placement of parking. Traffic flow is complicated by the convergence of traffic from Arsenal Road, M Avenue, and the West Gate.

Transportation modes on base also include air and rail transport but these generally do not support personnel transport.

The Roy Gate was recently relocated/reconfigured and a new roadway was constructed in order to address safety and security issues (URS 2003). The gate and roadway were designed to better support the amount of traffic received and to increase safety for pedestrians at the Hill Aerospace Museum.

In the DRMO area, there is a permitted hazardous waste facility; hazardous wastes are transported to and from this location.

### **3.11 Socioeconomics**

Hill Air Force Base straddles both Davis and Weber counties. Davis County lists the base as the county's largest employer (employs 10,000-14,999) while Weber County doesn't list the base in its top 36 employers (source: Utah Dept. of Workforce Services, September 2003). Currently there are 5,737 military personnel and 11,580 civilian employees at Hill AFB (General Plan 2002). In addition, 3,718 civilian contractors are employed on base.

Davis County had a population of 238,994 in 2000 (source: Governor's Office of Planning & Budget (GOPB)). It ranks 2<sup>nd</sup> in the state for population density and 29<sup>th</sup>, or last, in land area with 304 square miles, an average of 786 persons per square mile. In 2002, Davis County population increased to 250,265 (source: Utah Population Estimates Committee). This represents an increase of 4.7%

Weber County had a population of 196,533 in 2000 (source: GOPB). It ranks 3<sup>rd</sup> in population density for the state and 28<sup>th</sup> in land area with 576 square miles, an average of 341 persons per square mile. In 2002, Weber County population increased to 203,277 (source: Utah Population Estimates Committee). This represents an increase of 3.4%.

The current NG facility is within Davis County, just south of Hill AFB across Highway 193. The facility is within a commercial business area that includes Weber State University - Layton campus. It borders a residential area. NG leases the facility from a private building owner and is then reimbursed by ICBM SPO each month for the cost of the lease. The current lease expires October 2005.

Civilian federal defense employment dropped significantly between 1990 and 2000. According to the Department of Economic Analysis *State of Utah Employment by Detailed Industry* data (source: GOPB), civilian federal defense employment for the state was 21,220 in 1990 and dropped to 12,925 by the year 2000. In 2001, that number had increased to 13,842 and was predicted to remain stable for the next 20 years or so.

Hill AFB had a 2003 payroll of \$748 million (Source: Salt Lake Tribune, 2004). The estimated annual impact on the Utah economy is \$2 billion. Hill AFB's total 2003 expenditures were \$901 million and annual contracts awarded totaled \$696 million. Hill Air Force Base is the single largest employer in the state of Utah (General Plan 2002).

### **3.12 Solid and Hazardous Materials/ Waste**

Hazardous materials management at Hill AFB is established by AFI-32-7086, Hazardous Materials Management. This AFI incorporates the requirements of all Federal regulations, Department of Defense Directives, and other AFIs for the reduction of hazardous materials uses and purchases.

Hazardous materials used on Hill AFB are managed through the Ogden ALC Center Hazardous Material Cell and the Hazardous Material Dispensing Facility which provide centralized management of the procurement, handling, storage, and issuing of hazardous materials. A review and approval process is utilized by Air Force personnel to ensure that users are aware of exposure and safety risks. Base management plans in conjunction with the Hazardous Waste Management Plan assist compliance with applicable Federal, state, and local regulations.

Hill AFB is permitted under RCRA for the management and disposal of hazardous waste at the Defense Reutilization and Marketing Office. Hill AFB is classified as a Large Quantity Generator of hazardous wastes and operates under an EPA permit. There are 228 hazardous waste generating sites on the AFB (General Plan 2002).

Many of the structures in the 1200 Area, where the ICBM SPO and LM facilities are currently housed, were constructed in the early 1940s. These WWII era buildings likely have asbestos in thermal system insulation, floor tiles, and exterior transite. There is also the potential presence of lead-based paint.

#### Museum Site

As noted in Section 3.9, this Site is suspect for explosives due to the history of use and activities in the 1900 Area. According to the Explosives Safety Office, USAF manual 91-201 dictates that in order to turn a property over to commercial use, the property must be ensured to be free of explosives and old ordnance. In addition, Department of Defense Manual 6065.9 requires specific safety standards that would apply to this property conversion.

The WWII era buildings in the 1900 Area have asbestos present in the thermal system insulation, floor tiles, and exterior transite and have the potential for lead-based paint.

#### DRMO Site

Building 899 on this site was built in 1943, and may contain asbestos and lead-based paint.

The DRMO area contains a permitted hazardous waste facility (personal communication, Alan Cooley). As a permitted site, there is transportation of hazardous waste to and from the facility location.

#### Garden Site

Building 1150 on this site was built in 1966 and may contain lead-based paint.

### **3.13 CERCLA/IRP Sites**

Under the IRP (Installation Restoration Program) and CERCLA (Comprehensive Environmental Response, Compensation, & Liability Act) efforts at Hill AFB, a Federal Facility Agreement was signed which resulted in the designation of 11 Operable Units (OUs) (**Figure 8**). These OUs must not be disturbed without the concurrence of OO-ALC/EM and (OO-ALC/JA). Further information regarding CERCLA/IRP sites is contained in the Environmental Baseline Survey reports prepared by Bowen Collins & Associates (BCA) in January 2004 for the four alternative SMF sites.

#### Museum Site

The Museum Site is located on ground above Operable Unit 6 (OU6). Depth to water at OU6 is about 40 feet bgs, however, surface soils may also be contaminated in this area. OU6 is primarily contaminated with trichloroethylene and dichloroethylene; the levels of contamination do not pose imminent health hazards. The selected remedial action on this site is natural attenuation. (BCA 2004a) The source areas for OU6 are presumed to be within the MAMS-2 (Missile and Munitions Storage) area and have created an east and west ground water plume. The 1900 Area, which houses the existing Propellant Lab (proposed for demolition at this site and construction at another site), is directly above the OU6 west ground water plume. The east plume is outside the proposed site area for the SMF.

The Museum Site is located in an area classified as Category 7 (BCA 2004a), a designation signifying that it requires further investigation. There may be areas of soil and groundwater contamination in the 1900 Area. Old ordnances are suspected to exist on the site. The WWII era buildings in the 1900 Area have asbestos present in the thermal system insulation, floor tiles, and exterior transite and have the potential for lead-based paint. Building 1946 has a wastewater basin that consists of a small earthen sump that receives industrial wastewater. This sump connects to a 3,000 gallon UST.

OU6 includes an area of soil contamination approximately 100 feet south of the current Propellant Lab, within the footprint of the Museum Site. Soil testing for hazardous waste characteristics is recommended to identify disposal requirements (BCA, 2004a).

#### South Gate Site

The South Gate Site sits atop OU8. OU8 consists of contaminated ground water from OU3 and OU7, combined for the purposes of remediation. The depth to contaminated ground water under the South Gate Site is approximately 80 feet. Two ground water extraction systems are currently operating at this site. This site is classified as Category

5 (Remedial or other action underway) based upon contaminated ground water under the site that is currently undergoing remediation (BCA 2004b). There is no known soil contamination on the South Gate Site.

#### DRMO Site

Based upon the IRP investigations, there are known areas of soil and ground water contamination on this site (BCA 2004c). The northwest corner of the Site is within OU5. The remainder of this Site is classified as Category 3 – contamination below level that requires any action. OU10 includes ground water plumes identified during OU9 investigations, one of which emanates from the southern part of the DRMO Site.

#### Garden Site

The Garden Site straddles the border between the 1100 Area and the 1700 Area. The 1100 Area is within OU10. The 1700 Area includes the Rail Shop, which is part of OU5. Contaminated soil may occur under portions of the Garden Site.

According to the Phase I EBS investigation (BCA 2004d), the Garden Site is classified as Category 3 – contamination below level that requires any action. Trace levels of ground water contamination are known from the west (down-gradient) side of the Site. The source of these trace levels could be small spills from common equipment used onsite such as lawnmowers & tillers.

OU9 is south of the Garden Site, and consists of various solid waste management units (SWMUs) identified by the Utah DEQ that are not part of other existing OUs at Hill AFB.

## **4.0 Environmental Consequences**

### **4.1 Surface Water**

#### **4.1.1 Proposed Action**

##### **Impacts common to all sites:**

Construction-related storm water impacts would be temporary, and would be minimized by using standard Best Management Practices (BMPs). These BMPs would include such measures as minimizing disturbed areas, installing sediment control such as silt fences, and quickly revegetating disturbed areas after construction is completed.

Over the long term, a greater volume of storm water would be produced from the developed site due to more pavement and roofed areas. This would contribute more storm water runoff than the unpaved ground surface because infiltration would be reduced. This runoff could also pick up increased pollutant loads from vehicle motor oils, road salts, etc. All such runoff would be directed to the storm drain system, so impact would be minimal.

##### **Site-specific impacts:**

##### Museum Site

This site would need to be reviewed for storm water retention capacity.

##### South Gate Site

Pond 3 would be undersized to handle the additional surface water runoff from the proposed SMF. Additional capacity would need to be provided.

##### DRMO Site

This site would need to be reviewed for storm water retention capacity.

##### Garden Site

Construction at this Site would directly impact the storm water retention facility that services the DEPMEDS warehouse. Capacity for both the SMF and the DEPMEDS warehouse would be required in a newly constructed storm water pond or ponds.

#### **4.1.2 No Action**

Under the No Action Alternative, there would be no impacts to surface water resources.

### **4.2 Ground Water**

#### **Proposed Action**

Although not directly impacting the ground water availability, increased water usage by approximately 700 new employees could put additional stress on an already strained water supply system.

#### **4.2.2 No Action**

Under the No Action Alternative, there would be no impacts to ground water resources from the SMF construction.

### **4.3 Soils**

#### **Proposed Action**

In order to place one level of each SMF building below ground, approximately 130,000 to 167,000 bank cubic yards of soil would be removed from the selected site. Soils at all sites would have a high potential for wind erosion. Depending upon the nature of soil contamination existing on any or all of these sites, appropriate containment and disposal measures would be required. EM would require notification prior to any movement of contaminated soil.

#### **4.3.2 No Action**

There would be no impacts to soils at the proposed sites under the No Action Alternative.

### **4.4 Vegetation**

#### **4.4.1 Proposed Action**

##### **Impacts common to all sites:**

Any vegetation occurring on the approximately 27-acre selected site would be removed during site preparation prior to SMF construction. Landscaping of the completed facility would provide vegetation complementary to the site design, and is expected to provide an overall increase in 'green space' at Hill AFB.

##### **Site-specific impacts:**

##### South Gate

If the SMF were constructed at this site, the existing fields and landscaped areas in this portion of the Community Center would be removed and replaced with several buildings and associated parking lots, as well as areas of landscaped vegetation. Although the grassy areas of the existing Centennial park and the soccer fields could be developed in another area within a year, the larger existing evergreen and deciduous trees in the FAMCAMP area would take 10-20 years or more to replace.

##### Garden Site

At this site, the garden plots would be lost.

#### **4.4.2 No Action**

There would be no impacts to current vegetation resources at the sites due to the SMF construction.

## **4.5 Land Use**

### **Proposed Action**

#### **Impacts common to all sites:**

Land use would change to Administrative from the current designation(s). Changes to the General Plan would be necessary.

Any underground utilities affected by site preparation and excavation would require supply and design considerations.

#### **Site-specific impacts:**

##### Museum Site

The land use for the Museum Site would change from Industrial to Administrative. Considering the proximity of this site to the Museum, this is likely to be a positive change for the area.

##### South Gate Site

SMF construction at the South Gate Site would require relocation of several community facilities including the soccer fields, Par Course Track, Centennial Park, FAMCAMP, soccer fields, and buildings 544, 561, 563, and 564. The relocation of these facilities would entail additional NEPA analysis.

A change in the use of the South Gate Site from Outdoor Recreation to Administrative would require approval from the Facilities Board either in the facility siting process or through a request to modify the General Plan.

##### DRMO Site

Considering the adjacent community housing area, the use of this site for Administrative purposes would likely be an improvement over the current Industrial use.

##### Garden Site

The current uses of Open Space, Outdoor Recreation, and Industrial would change to Administrative. The garden plots would be disturbed during site preparation. Depending on the siting in this area, the designated land tract easement on the north side (General Plan 2002 – Constraints and Opportunities Map 4A-7) may be affected.

### **4.5.2 No Action**

Under the No Action Alternative, land uses would not be impacted by the SMF siting.

## **4.6 Cultural Resources**

### **4.6.1 Proposed Action**

If any cultural resources are observed in the area during any phase of construction, activities in the immediate vicinity would stop, and the Inadvertent Discovery Procedures would be implemented with direction from the Hill AFB Cultural Resources

Manager, in accordance with the Hill AFB Integrated Cultural Resources Management Plan.

If this plan is followed, no significant adverse impacts to cultural resources are expected from the construction activities of the Proposed Action.

### **Site-specific impacts:**

#### Museum Site

The Museum Site would require the demolition of the ten historic buildings at the Propellant Lab. These buildings are already slated for demolition as part of the Propellant Lab relocation project (URS 2001), but the aggressive schedule associated with this project may require their demolition at an earlier date. Any mitigation required under the MOA with the Utah SHPO must be completed prior to demolition activities.

#### South Gate Site

Building 562 (Electric Switch Station) was built in 1941 and has been identified as historic, but has not been evaluated. If this structure would be impacted by the SMF, it must be recorded, evaluated, and impacts mitigated.

#### DRMO Site

Building 899 has been identified as historic, but is not eligible for the NRHP. Therefore there would be no impacts to eligible cultural resources at the DRMO Site.

#### Garden Site

The nearby historic railroad corridor has not been recorded or evaluated. If the proposed facility is situated in such a way that the corridor is impacted, the railroad corridor must be recorded, evaluated, and impacts mitigated. Building 1150 was built in 1966 during the Cold War era and was determined not eligible for the NRHP. A historic property, Building 1701 (Railroad Shop), is located south of the proposed Garden Site and would not be impacted by the proposed SMF.

### **4.6.2 No Action**

Under the No Action Alternative, no construction activity would take place. Therefore, there are no expected adverse impacts to cultural resources associated with the No Action Alternative.

## **4.7 Air Quality**

### **4.7.1 Proposed Action**

The sources of air pollutants resulting from the Proposed Action are particulate and tail pipe emissions from the construction, combustion emissions from the facility heating source, and mobile emissions from vehicle traffic in regard to the facility employees.

Construction of the facility and the associated heating equipment are not subject to air permitting requirements. However, construction activities associated with the Proposed

Action will result in some short-term emissions of regulated pollutants. Regardless of the site selection, Hill AFB would be required to submit a fugitive dust control plan that documents the steps to minimize fugitive dust during construction activities (UACR 307-309). These emissions include particulate matter from construction equipment, construction activities, access roads, and land disturbance. If fugitive dust, measured by opacity, exceeds 15 percent or 10 percent at the property boundaries during construction or there after, Hill AFB could be subject to air quality violations.

Air dispersion analysis would not likely be required because the annual emission estimates from the tail pipe emissions of vehicles and fugitive dust generated from paved roads/parking lot traffic are below modeling thresholds.

Emission estimates for all site alternatives are below the *de minimus* levels of the Federal Conformity Rule (40 CFR 93.153). Thus, a conformity analysis would not likely be required. Emission estimates were calculated using MOBILE6 emission estimating software. MOBILE6 is an EPA approved and preferred emission factor model. Emissions from a representative selection of vehicles are calculated in grams per mile for hydrocarbons, carbon monoxide, nitrogen oxide, and particulate matter. Because base-wide mobile emissions, as measured by parking lot capacity, have not been performed at Hill AFB, the Proposed Action may result in a larger-scale mobile emission conformity analysis. Further discussions with the regulatory authority can discern this possible requirement.

A permit modification to the existing Title V Permit would be required. Because of the location within an existing Title V source, within an air quality maintenance area and a proposed parking lot with 2000 stalls, permit modification requirements should be discussed with the state regulator at least six months prior to construction. Discussion should include offsets and best available control technology (BACT). The applicability of offsets within a "maintenance area" resulting from mobile sources can only be determined with further investigation. Achieving BACT would be required with this modification, which can be demonstrated in parking lot design using the following:

- Care taken to minimize delay by incorporating easily accessible exits and entries and by incorporating wide throughways to maximize vehicle flow.
- Maximize access level of service – Optimal size parking stalls to incorporate various vehicle types included. Allowances for one-point turns into stalls allows for less time spent within the parking areas.
- Minimize internal circulation - Signs at entries posted to notify employees and visitors where the available parking stalls are located. Handicapped parking areas clearly marked. Multiple exits incorporated allowing for efficient flow.
- Pedestrian friendly design – Bus stops located within the parking areas (employee and visitor parking), which allows for less pedestrian congestion.
- Pro-active design to encourage alternate forms of transportation – Bike racks, car pool, and shuttle transportation have a designated parking area.

- Cool design – Exposed parking areas have grass buffers and barriers that incorporate temperatures of 10-20 degrees less than the parking lot itself. Trees planted in exposed areas to allow for shading.

During the construction phase, fugitive dust emissions can be controlled by chemical stabilization, erecting wind breaks, and watering. Construction phase fugitive dust can further be reduced by ceasing operations during high wind events (i.e. greater than 25 m.p.h.), watering down the construction zone and preventing track out of mud and soil from construction equipment to paved roadways). After construction is complete, establishing vegetation and street sweeping are common maintenance procedures to prevent fugitive dust emissions.

**Site-specific impacts:**

Annual impacts from the parking structure are analyzed based on interviews and data submitted by Hill AFB personnel. The characteristics of the parking lot remain constant for all site alternatives, except for the distance traveled by employee personnel. Distances traveled to each site alternative were obtained using a 7.5-minute topography map and AutoCAD program. The emission analysis utilized the documents and schematics submitted by Hill AFB to determine the necessary data needed to calculate the vehicle miles traveled (VMT) and MOBILE6 parameters due to parking utilization. MOBILE6 was employed to determine an emission factor for each pollutant with respect to VMT. EPA’s emission factors contained in AP-42, Table 13.2.1-4 (EPA 2003) were used to estimate fugitive emissions from the paved roads and parking lot.

Estimates were made for the percentage of traffic flow entering from each gate based on the location of site alternative and major residential areas. See Appendix A for distribution of traffic for each selection. It was assumed that the Roy Gate would most likely be used for entry onto the base if the Museum Site or Garden Site is selected. The parking lot has the following user characteristics.

**Table 4.7-1 Parking Lot User Characteristics <sup>a</sup>**

Max # of available parking stalls (vehicles/shift)	2,000
# of shifts per day (shifts/day)	1
Weekly parking utilization (days/week)	5
Yearly parking utilization (weeks/year)	52
No. of vehicles available for parking per year (vehicles/year)	520,000
Round Trip Distance to/from Parking Stalls and Parking Lot Entry (miles/vehicle)	1.73
Distance Traveled Each Year to Utilize Parking Lot (VMT/year)	899,184
<sup>a</sup> All user characteristics parameters are assumed to be worst-case.	

### Museum Site

Round trip distance for this site was estimated to be 1.73 miles. As noted in Table 4.7-1, this results in total distance traveled to the parking lot per year of 899,184 VMT/year. Table 4.7-2 depicts the hourly and annual emissions emitted from the source as a result of the Museum Site parking lot.

**Table 4.7-2 Total Emissions From Parking Lot – Museum Site**

<b>Criteria Pollutant</b>	<b>Total Emissions from Parking Lot (lb/hr)</b>	<b>Total Emissions from Parking Lot (tpy)</b>
VOC	0.4	1.9
CO	3.7	16.4
NOx	0.3	1.4
PM <sub>10</sub> , Non-fugitive	0.0	0.0
PM <sub>10</sub> , Fugitive	0.2	0.9
SO <sub>2</sub>	0.0	0.0
*Off-set, combined NOx, SO <sub>2</sub> , and PM <sub>10</sub>	0.6	2.4

\*May apply in maintenance areas

Total emissions are below air dispersion modeling thresholds.

### South Gate Site

Round trip distance for this site was estimated to be approximately 1.30 miles. This results in total distance traveled to the parking lot per year of 677,977 VMT/year. Table 4.7-3 depicts the hourly and annual emissions emitted from source as a result of the South Gate Site parking lot.

**Table 4.7-3 Total Emissions From Parking Lot – South Gate Site**

<b>Criteria Pollutant</b>	<b>Total Emissions from Parking Lot (lb/hr)</b>	<b>Total Emissions from Parking Lot (tpy)</b>
VOC	0.3	1.5
CO	2.8	12.4
NOx	0.2	1.1
PM <sub>10</sub> , Non-fugitive	0.0	0.0
PM <sub>10</sub> , Fugitive	0.2	0.7
SO <sub>2</sub>	0.0	0.0
Off-set, combined NOx, SO <sub>2</sub> , and PM <sub>10</sub>	0.4	1.82

Total emissions are below air dispersion modeling thresholds.

### DRMO Site

Round trip distance for this site was estimated to be approximately 1.97 miles. This results in total distance traveled to the parking lot of 1,025,297 VMT/year. Table 4.7-4 depicts the hourly and annual emissions emitted from source as a result of the DRMO Site Alternative parking lot.

**Table 4.7-4 Total Emissions From Parking Lot – DRMO Site**

Criteria Pollutant	Total Emissions from Parking Lot (lb/hr)	Total Emissions from Parking Lot (tons/year)
VOC	0.5	2.2
CO	4.5	18.7
NOx	0.4	1.6
PM <sub>10</sub> , Non-fugitive	0.0	0.0
PM <sub>10</sub> , Fugitive	0.2	1.97
SO <sub>2</sub>	0.0	0.0
Off-set, combined NOx, SO <sub>2</sub> , and PM <sub>10</sub>	0.6	2.75

Total emissions are below air dispersion modeling thresholds.

Garden Site

Round trip distance for this site was estimated to be approximately 4.73 miles. This results in total distance traveled to the parking lot of 2,457,867 VMT/year. Table 4.7-5 depicts the hourly and annual emissions emitted from source as a result of the Garden Site Alternative parking lot.

**Table 4.7-5 Total Emissions From Parking Lot – Garden Site**

Criteria Pollutant	Total Emissions from Parking Lot (lb/hr)	Total Emissions from Parking Lot (tpy)
VOC	1.2	5.3
CO	10.2	44.8
NOx	0.9	3.8
PM <sub>10</sub> , Non-fugitive	0.0	0.1
PM <sub>10</sub> , Fugitive	0.6	2.6
SO <sub>2</sub>	0.0	0.1
Off-set, combined NOx, SO <sub>2</sub> , and PM <sub>10</sub>	1.5	6.6

Total emissions are below air dispersion modeling thresholds.

**Conclusion**

Short-term impacts due to construction activities, regardless of the site selection, would require a fugitive dust control plan. Discussions with the Utah State Division of Air Quality for air permit modifications should commence six months before construction. BACT attributes described in the Proposed Action section should be conveyed to the contractor designing the parking lot. Offsets may be required, based on the location of the Proposed Action; discussions with state regulators on offset should commence. Estimates for only the Proposed Action show emissions are *de minimus*, thus Federal Conformity Rule analysis is not applicable. Discussions with state regulators should also include whether a base-wide conformity applicability determination would be

triggered with the construction of the new parking lot. Air dispersion modeling for permitting purposes would not be required, but emission estimating, as shown in this analysis, would be required for the permit modification.

Long-term impacts to air quality associated with the Proposed Action would be minimal. Selection of the Garden Site Alternative would result in relatively higher emission than the other sites; all would be below air dispersion modeling thresholds.

## **No Action**

The No Action Alternative would not impose additional air quality regulatory requirements. A fugitive dust control plan would not be required for the construction of the SMF facility, modification of the air quality permits would not have to be performed, and triggering a base-wide conformity analysis would not result. Approximately 700 employees or contractors would not enter Hill AFB daily, which would result, on 182,000 less vehicles trips per year. Short-term impacts would not result, because there would be no construction activity. With all other parameters remaining constant, there would be no long-term impacts resulting from No Action.

## **4.8 Noise**

### **Proposed Action**

#### **Impacts common to all sites:**

There would be a slight increase in personnel transport to and from the proposed facility, but noise levels generated by this traffic would be negligible with regard to the overall noise levels at Hill AFB.

#### **Site-specific impacts:**

##### Museum Site

There could be temporary noise disturbances to museum-goers during construction at the Museum Site.

##### South Gate Site

Noise level reduction measures would be necessary if the SMF is constructed in this area.

### **4.8.2 No Action**

Under the No Action Alternative, there would be no impacts to noise levels due to the SMF siting.

## **4.9 Health and Safety**

### **4.9.1 Proposed Action**

SMF construction would bring heavy equipment into the area, as well as potential noise and dust issues, and disturbance of contaminated soils. Transportation detours and delays may occur. The site preparation and facility construction activities would be managed in accordance with required safety practices. Excavation and removal of contaminated soils would be conducted according to regulation.

#### **Site-specific impacts:**

##### Museum Site

The electromagnetic radiation hazard from the 729<sup>th</sup> ACS area east of the Museum Site exists out to a distance of 750 feet from the source, and within 10 feet of the ground. This would be of concern to site preparation and construction contractors, as well as some types of operating equipment. The relocation of the mobile radar unit prior to site work would alleviate this concern.

##### DRMO Site

See Section 4.12, regarding the permitted hazardous waste facility in this area.

### **4.9.2 No Action**

Under the No Action Alternative, Health and Safety would not be impacted by the SMF siting.

## **4.10 Transportation**

### **4.10.1 Proposed Action**

#### **Impacts common to all sites:**

Short-term traffic delays during construction activities would likely occur. Congestion on other base roads could occur during construction as drivers try to avoid the construction area. The delays and construction-related congestion would be expected to be minimal and of short duration.

The road system in the direct vicinity of the site would be amended for access to the SMF.

After construction, there would be an increase in traffic on base by up to 700 automobiles (net gain of 700 employees). With a military and civilian workforce of over 15,000 persons, this increase reflects about a 5 percent increase in traffic. The additional traffic from the increase in 700 employees on base would cause an increase in congestion depending on which gate is used to enter the base.

Vehicle traffic along Wardleigh Road and M Avenue could possibly increase in the mornings and evenings. However, overall traffic would decrease due to the collocation

of the ICBM SPO, LM, and NG in one facility. This would minimize traffic between buildings and the constant automotive traffic to and from the Clearfield facility.

Additional traffic would be present 5 days a week, 52 weeks per year. One shift per day is proposed from 0600 to 1800 hours. Approximately 2000 vehicles are expected to park at the facility.

### **Site-specific impacts:**

#### Museum Site

The Museum Site would be located off North Drive, accessed from Wardleigh Road. Location of the new facility at this site would alleviate some of the traffic congestion at the 1200 Area where the ICBM SPO and LH facility is currently located. The most direct access to this site would be from the Roy Gate, which is generally under-utilized as it only receives 7 percent of base traffic.

#### South Gate Site

The site would be located off Southgate Drive and 11<sup>th</sup> Street. Location of the new facility at this site would alleviate some of the traffic congestion at the 1200 Area where the facility is currently located but would increase congestion in the south base area. The most direct access to this site would be from the South Gate and Southgate Drive, then 11<sup>th</sup> Street. The increased use of this gate would increase congestion during peak hours.

#### DRMO Site

This site would be located off Wardleigh Road. Location of the new facility at this site could alleviate some of the traffic congestion at the 1200 Area where the facility is currently located but would increase congestion in the south base area. The most direct access to this site would be from either the West Gate or the South Gate. Traveling from the West Gate, M Avenue and Wardleigh Road would be utilized. Traveling from the South Gate a number of roads would be utilized including 11<sup>th</sup> Street and Wardleigh Road. The increased use of either of these gates would increase congestion during peak hours.

#### Garden Site

The Garden Site would be located off Aspen Avenue, a local road accessed from Maine Street off Wardleigh Road. Railroad corridors are present in this area. Railroad crossings could cause traffic congestion when trains are present. Location of the new facility at this site would alleviate some of the traffic congestion at the 1200 Area where the facility is currently located. The most direct access to this site would generally be from either the Roy Gate, generally under-utilized, or the West Gate, which is heavily utilized.

### **4.10.2 No Action**

Under the No Action Alternative, there would be no change in number of vehicles, traffic flow, or capacity as a result of this project. The Clearfield facility employees would

continue to travel to the on-base ICBM and LH facility as needed. The current facility, located in the 1200 Area, would continue to be congested during peak hours.

## **4.11 Socioeconomics**

### **4.11.1 Proposed Action**

#### **Impacts common to all sites:**

The 700 employees that would be relocated to the new facility are already employed in Davis County and contracted by the AFB. No additional jobs would be created as a result of the proposed project, therefore, there would not be an influx of people to either of the densely populated counties (Davis and Weber) as a result of the Proposed Action. There would be no expected change in the demographic profile within the region. There would be no increase in payroll resulting from the relocation of the 700 employees.

Local equipment suppliers and a local worker base would be utilized for construction. This would generate revenue to local communities, a short-term benefit.

By leasing this property, Hill AFB would experience \$70,000 per year in savings for utility expenses and obtain a one-time cost avoidance of \$4.3 million for planned capital improvements such as HVAC and other replacements of and improvements to existing facilities.

#### **Site-specific impacts:**

##### South Gate Site

The relocation of community facilities from this area to another would disrupt any planned events during the site preparation process. Families who utilize this area would be inconvenienced by the change in location of community facilities. Some facilities/functions may be unavailable for an interim period.

### **4.11.2 No Action**

The 700 employees would remain off base at the current facility. There would continue to be loss of time and efficiency in coordination between the ICBM SPO and LH facility located on-base and NG. There would not be the short-term benefit of revenue to local equipment suppliers and work force that would be generated through the construction of the new facility. An estimated cost of \$4.3 million would be incurred by Hill AFB for planned capital improvements such as HVAC and other replacements of and improvements to existing facilities.

## **4.12 Solid and Hazardous Waste**

### **4.12.1 Proposed Action**

#### **Impacts common to all sites:**

Under the Proposed Action, activities potentially involving hazardous materials and waste include demolition of aging structures at some of the sites, and construction of the SMF buildings.

During construction of the facility, any hazardous materials used, such as fuels and solvents, would be responsibly managed according to Hill AFB Hazardous Materials Management Plan. The construction contractor would coordinate directly with the Ogden Air Logistics Center Hazardous Material Cell and the Hazardous Material Dispensing Facility regarding all hazardous wastes generated during construction of the Proposed Action.

The Proposed Action would include a small Electronics Equipment Lab that would generate a minimal amount of waste solder that would be managed in accordance with the Hill AFB Hazardous Waste Management Plan. The materials utilized in this process would be stored and managed in accordance with the Hill AFB Hazardous Material Management Plan.

The sewage lines would be connected to the local municipal sewage lines and routed to the existing treatment plant. Solid waste would be disposed of in accordance with Hill AFB Solid Waste Management Program.

#### **Site-specific impacts:**

##### Museum Site

Demolition of the existing Propellant Lab facility buildings would involve hazardous materials and solid waste. This would be managed under AFI-32-7086 which incorporates the requirements of all Federal regulations, Department of Defense Directives, and other AFIs regarding hazardous materials and waste.

The Environmental Management Directorate would be notified for approval prior to any movement of soil. If contaminated soil were encountered, it would be disposed of in accordance with CERCLA standards and Hill AFB requirements.

Selection of this site would require clearance by the EOD (Explosives Ordnance Disposal) function at Hill AFB. This process requires submittal of a clean-up plan to the Defense Safety Board, plan approval, and EOD site work to remove any explosives or ordnance. Planning is expected to take one month; actual clearance work (during summer, optimal conditions, staffed as needed) is expected to take two months.

The process of EOD clearance and soil testing/ remediation at this site would take up to 6 months.

### DRMO Site

If this site were selected, the current hazardous waste facility permit would need to be modified to account for the increase in people in the area. This modification would be in the traffic plan to accommodate evacuation of additional personnel in the event of an emergency.

Demolition of Building 899 would necessitate inspections for asbestos and lead-based paint, and proper management of such materials.

### Garden Site

Demolition of Building 1150 would necessitate inspections for asbestos and lead-based paint, and proper management of such materials.

## **4.12.2 No Action**

Under the No Action Alternative, the proposed facility would not be constructed. The existing facility would continue to be utilized. There would be no new construction or the associated increase in personnel, therefore, no increase in hazardous or solid waste or hazardous material use.

## **4.13 CERCLA / IRP Sites**

### **4.13.1 Proposed Action**

#### **Site-specific impacts:**

#### Museum Site

There is one Underground Storage Tank (UST) at this site near building 1946 that would require proper removal. The potential exists for contact with contaminated soil during excavation beneath the 1900 Area. The Environmental Management Directorate would be notified for approval prior to any movement of soil. Contaminated soil would be disposed of in accordance with CERCLA standards and Hill AFB requirements. Two monitoring wells in the 1900 Area would require abandonment prior to construction.

The ongoing ground water and soil remediation program associated with OU6 would need to be considered during design and construction of this alternative so that interference with, or additional impacts from, the contamination do not occur.

#### South Gate Site

The ground water remediation system at this site must not be disturbed. Care would need to be taken to ensure that contamination at OU8 is not exacerbated by construction of this facility at this site.

#### DRMO Site

Construction excavation may contact contaminated soils. Testing and remediation may be required in the portion of the site within an OU.

### Garden Site

Construction excavation may contact contaminated soils. Testing and remediation may be required in the portion of the site within an OU.

#### **4.13.2 No Action**

Under the No Action Alternative, the proposed facility would not be constructed. The existing facility would continue to be utilized. There would be no new construction or the associated increase in personnel, therefore, no impact to CERCLA/IRP sites. Ongoing groundwater contamination concerns and monitoring on the AFB would continue.

### **4.14 Cumulative Impacts**

The area reviewed for the cumulative impacts analysis includes Hill Air Force Base.

Reasonably foreseeable future facility development actions on the base include: construction of a new Propellant Testing & Analysis Complex in the 2000 Area of Hill AFB; construction of a new running track and fitness center near the South Gate Site; proposed expansion of the Hill Aerospace Museum; proposed facilities in the vicinity of the 729<sup>th</sup> ACS; and a multi-story training facility for the 419<sup>th</sup> reservists proposed east of the South Gate area.

#### Air Quality

Discussions with state regulators should include whether a base-wide conformity applicability determination is triggered with the construction of the new parking lot(s) and above-mentioned facilities.

#### Health and Safety

Ongoing upgrades, development, and improvements would continue to improve health and safety conditions at Hill AFB.

#### Transportation

Depending upon the construction timing and access needs of the above-mentioned facilities, traffic congestion could intensify on some areas of the Base.

#### CERCLA/IRP

Further development at Hill AFB is likely to promote further detailed site investigations and remediation of contaminated areas.

## **5.0 Potential Mitigation Measures**

No mitigation measures have been identified at this time.

## **6.0 List of Preparers**

Kay Winn, NEPA Program Manager, Hill Air Force Base, Utah.

Chris Mikell, Program Manager, Bowen, Collins & Associates, Salt Lake City, Utah.

Linda Matthews, Project Manager, JBR Environmental Consultants, Inc., Sandy, Utah.

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## **7.0 List of Persons and Agencies Consulted**

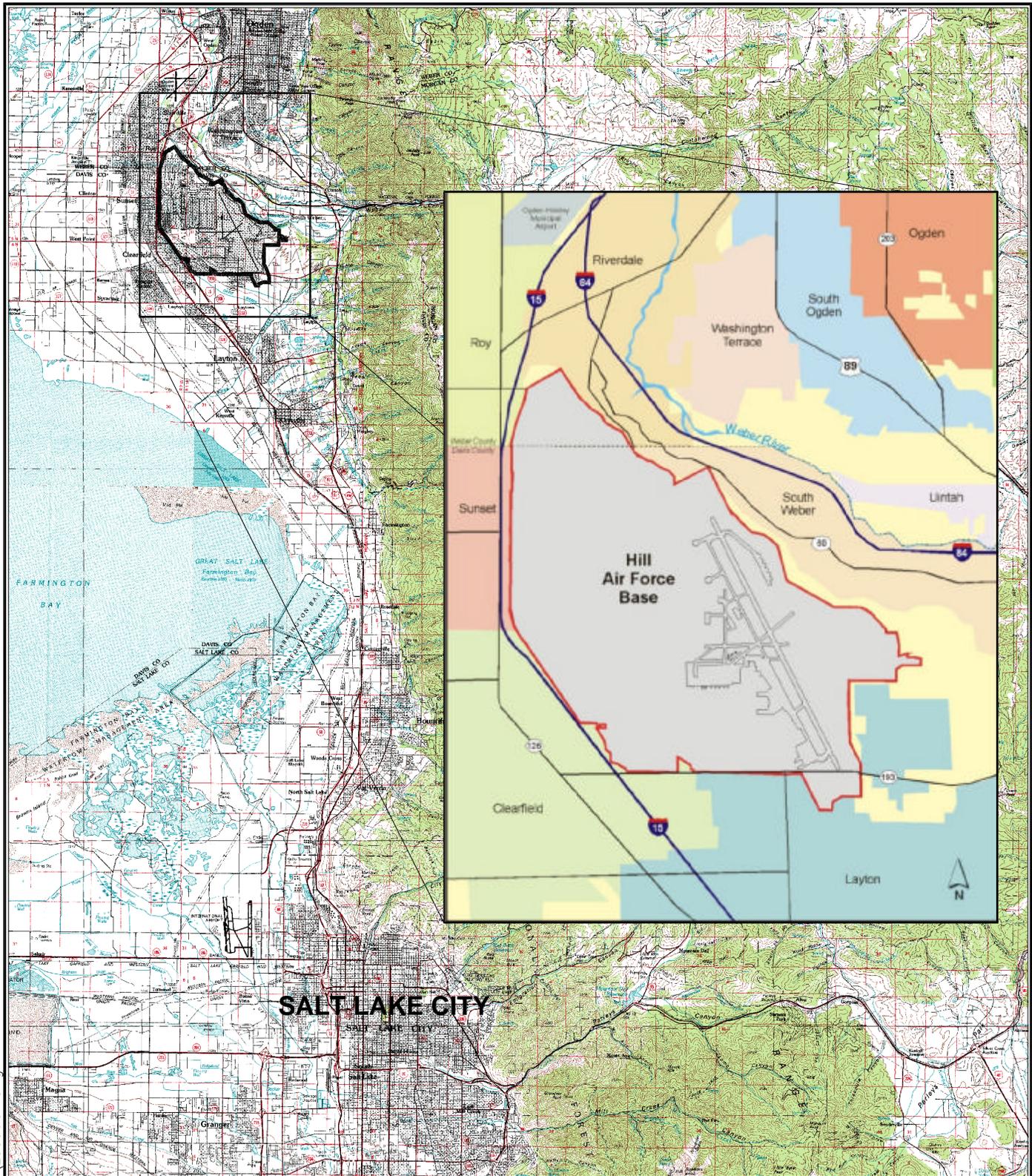
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# FIGURES

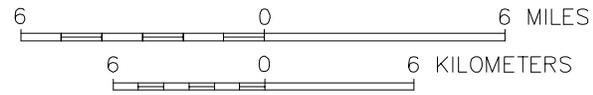
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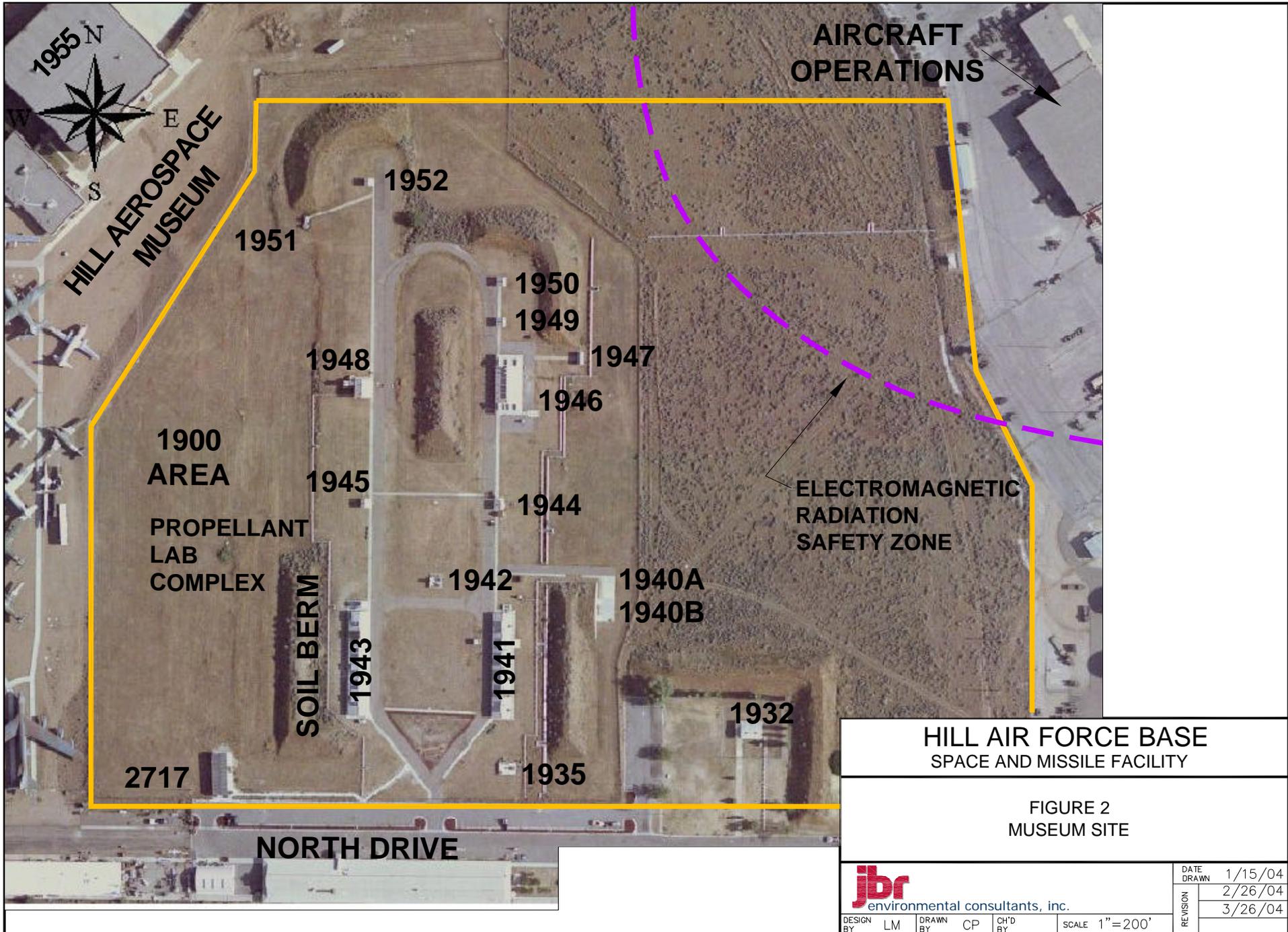
**SALT LAKE CITY**

**HILL AIR FORCE BASE  
SPACE AND MISSILE FACILITY**

**FIGURE 1  
LOCATION MAP**



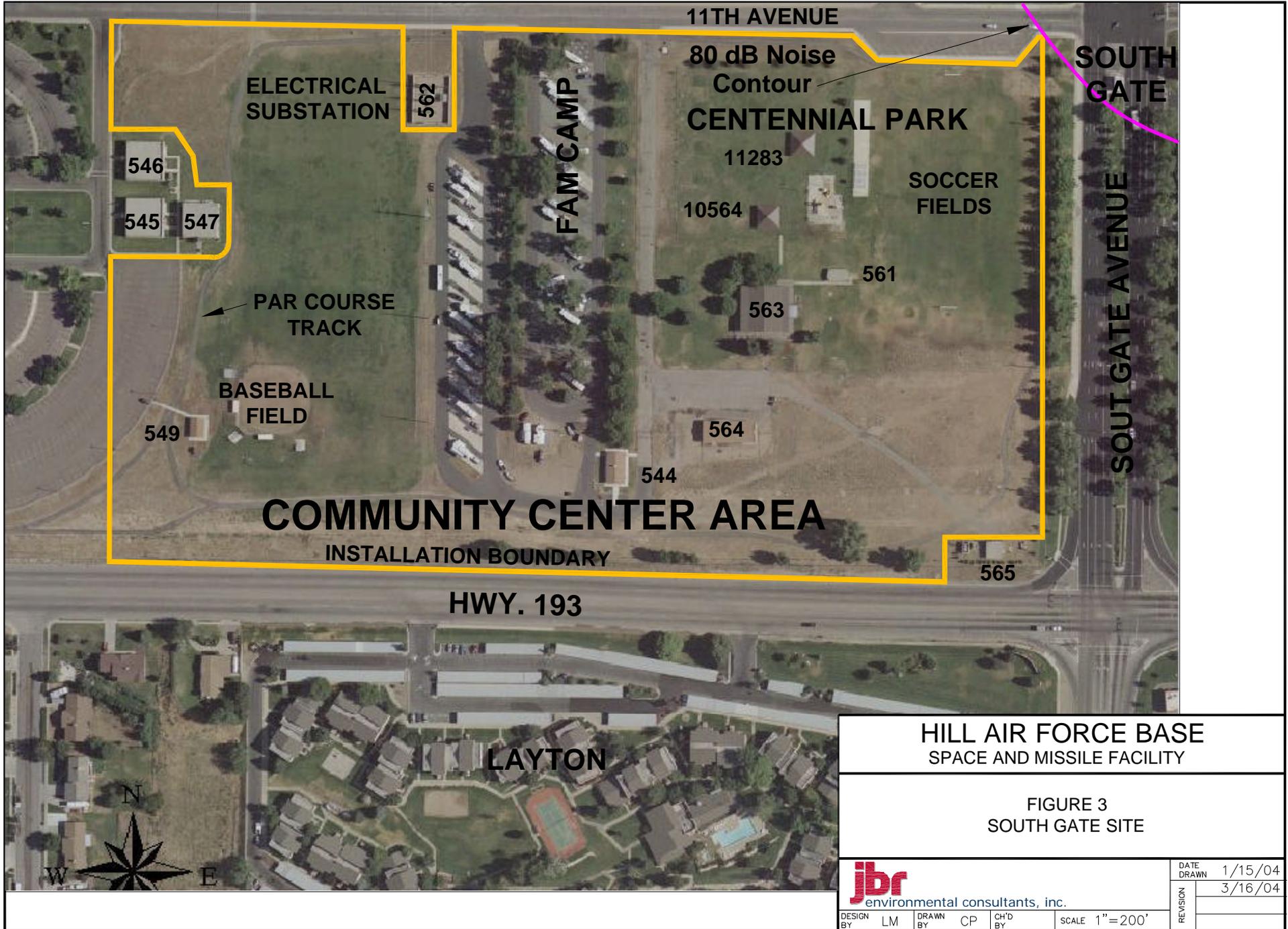
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DESIGN BY	LM	DRAWN BY	CP
CH'D BY		SCALE	1: 300,000
REVISION			



**HILL AIR FORCE BASE  
SPACE AND MISSILE FACILITY**

**FIGURE 2  
MUSEUM SITE**

<b>jbr</b> environmental consultants, inc.		DATE DRAWN	1/15/04
DESIGN BY	LM	DRAWN BY	CP
CH'D BY		SCALE	1"=200'
		REVISION	2/26/04
			3/26/04



HILL AIR FORCE BASE  
SPACE AND MISSILE FACILITY

FIGURE 3  
SOUTH GATE SITE

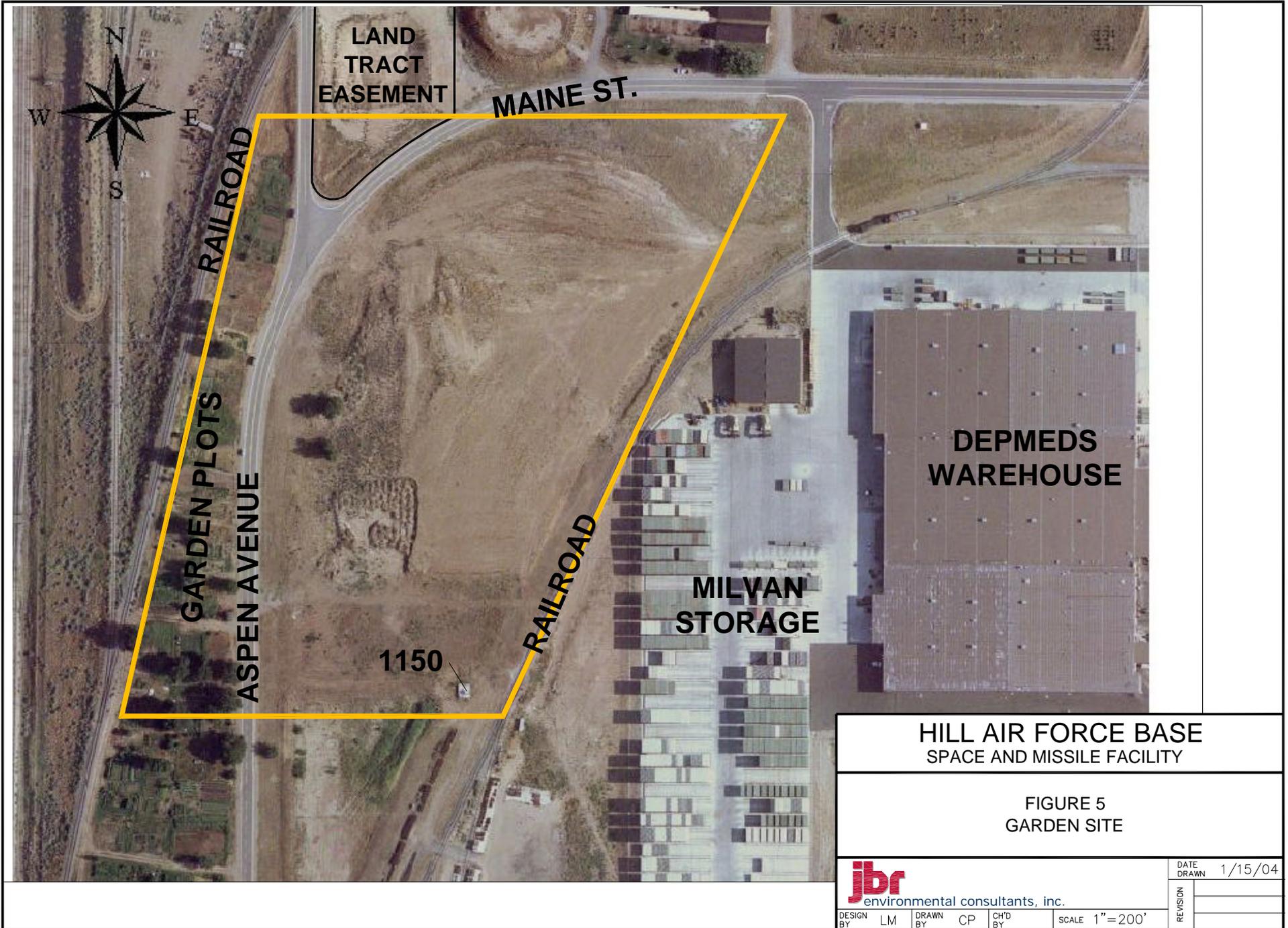
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DESIGN BY	LM	DRAWN BY	CP	CH'D BY	SCALE 1"=200'



HILL AIR FORCE BASE  
SPACE AND MISSILE FACILITY

FIGURE 4  
DRMO SITE

				DATE DRAWN 1/15/04
DESIGN BY LM	DRAWN BY CP	CH'D BY	SCALE 1"=200'	REVISION

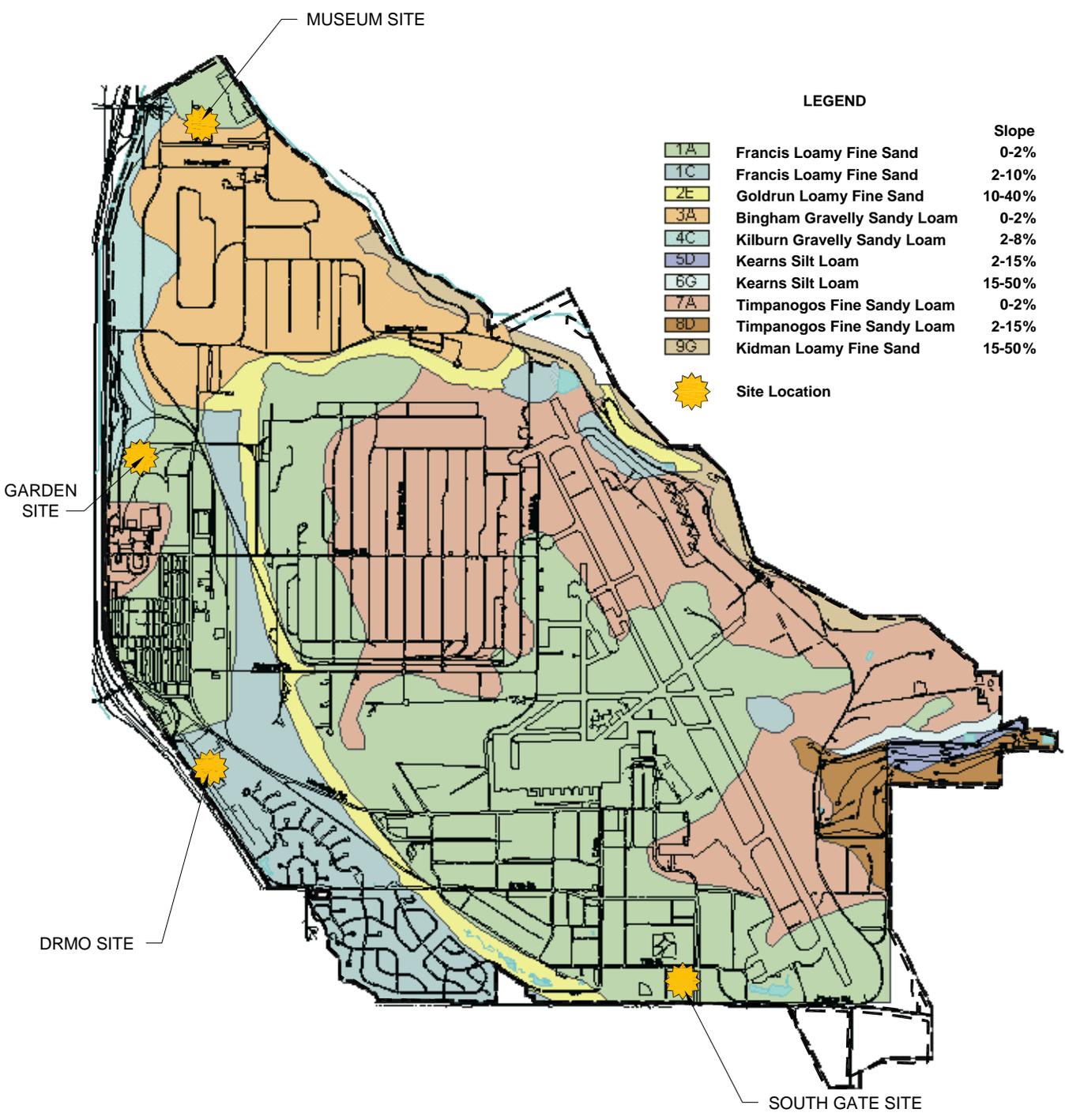


HILL AIR FORCE BASE  
SPACE AND MISSILE FACILITY

FIGURE 5  
GARDEN SITE

				DATE DRAWN	1/15/04
DESIGN BY	LM	DRAWN BY	CP	CH'D BY	REVISION
SCALE 1" = 200'					

drawings\HAFB-HillAirForceBase\soils-b.dwg

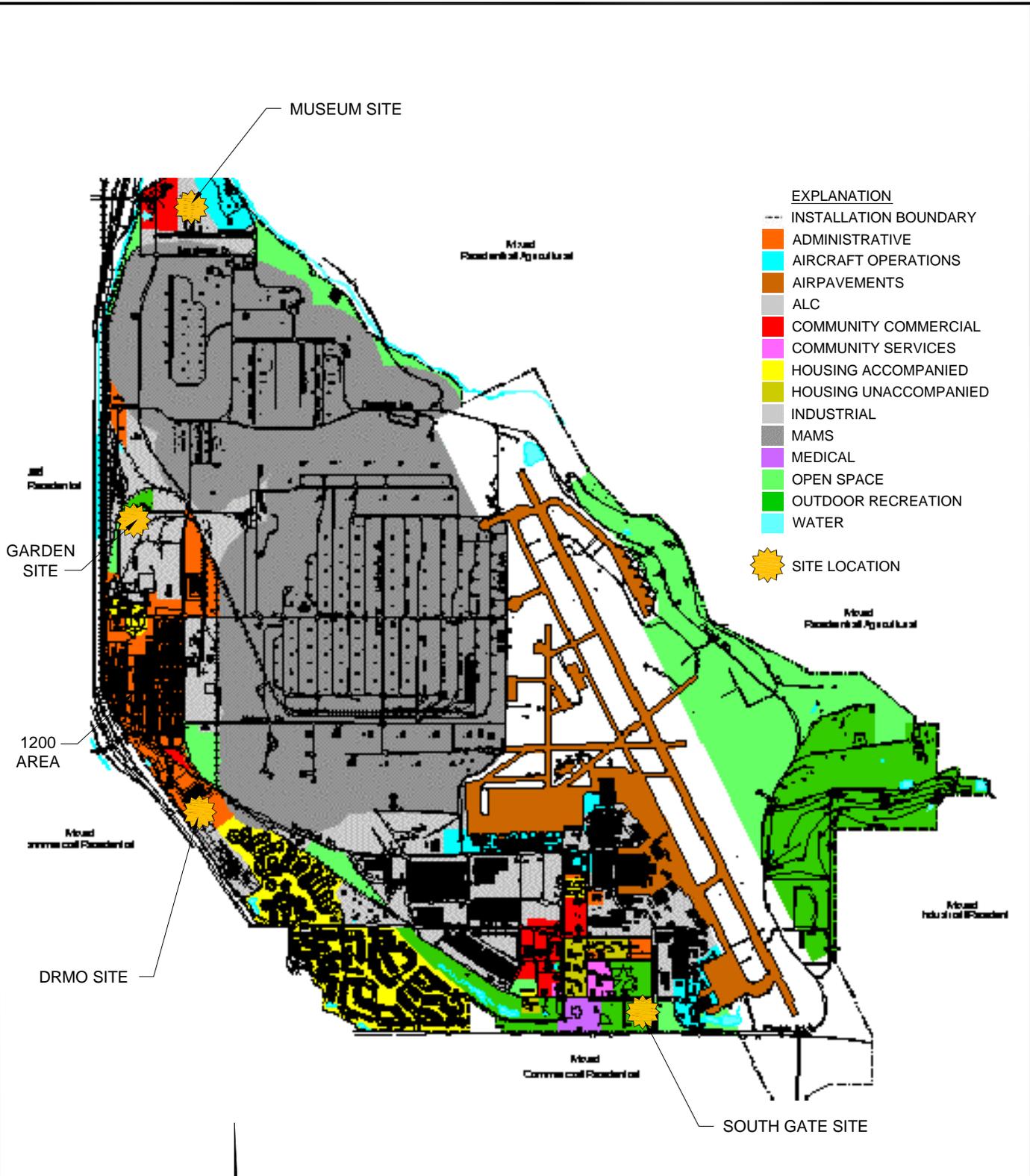


NOT TO SCALE

DRAWING TAKEN FROM HILL AFB EPIC REPORT

<b>HILL AIR FORCE BASE</b>	
SPACE AND MISSILE FACILITY	
<b>FIGURE 6</b>	
<b>SOILS MAP</b>	
<b>jbr</b> environmental consultants, inc.	
DESIGN BY: LM	DRAWN BY: CP
CH'D BY:	SCALE: NTS
DATE DRAWN: 1/15/04	REVISION: 2/26/04

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**HILL AIR FORCE BASE  
SPACE AND MISSILE FACILITY**

**FIGURE 7  
LAND USE MAP**

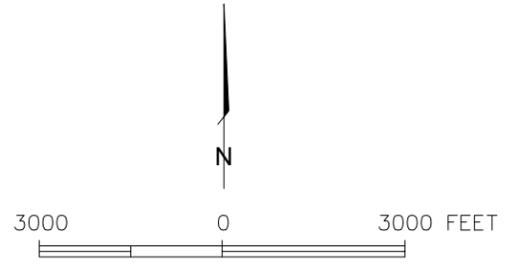
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		REVISION	3/26/04

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- EXPLANATION**
- BASE BOUNDARY
  - ★ SITE LOCATION
  - 10 OPERABLE UNITS



<b>HILL AIR FORCE BASE</b> SPACE AND MISSILE FACILITY	
FIGURE 8 OPERABLE UNITS MAP	
<b>jbr</b> environmental consultants, inc.	
DESIGN BY LM	DRAWN BY CP
CH'D BY	SCALE NTS
DATE DRAWN 1/15/04	REVISION 2/26/04

# **APPENDIX A**

## **Parking Lot Emissions Calculations**

## Hill Air Force Base Parking Lot Emissions

Alternatives	Distance	% of Cars	Estimate Average Round Trip (Distance) (Units)	
<b>1 Museum Site</b>				
1. Roy Gate	0.100416	85%		
2. West Gate	3.075627	15%		
3. South Gate	6.358046	5%		
		Total =	<b>1.73</b>	miles
<b>2 Garden Site</b>				
1. West Gate	1.749854	70%		
2. South Gate	5.032274	10%		
3. Roy Gate	3.176042	20%		
		Total =	<b>4.73</b>	miles
<b>3 DRMO Site</b>				
1. West Gate	0.72806	80%		
2. SW Gate	0.751721	10%		
3. South Gate	3.28242	10%		
		Total =	<b>1.97</b>	miles
<b>4 South Gate Site</b>				
1. South Gate	0.382598	90%		
2. West Gate	3.075627	10%		
		Total =	<b>1.30</b>	miles

\* Information based on 7 1/2 Topo map of the area, using AutoCAD to determine the distance of each scenario

Round trip distance from gate entrance to selected site

Percentages are based on user knowledge and assumption Roy Gate will not be open unless scenario 1 is selected

Majority of occupants will be from Northrop-Grumman (80%) which currently resides off base.

Residential trips originate from either Layton (South) or West (Clearfield) or Salt Lake City (South)

**Distance Driven to Utilize Parking Lot- Garden Site**

No. of available parking stalls (vehicles/shift) <sup>a</sup>	2000
No. of shifts per day (shifts/day) <sup>b</sup>	1
Weekly parking utilization (days/week)	5
Yearly parking utilization (weeks/year)	52
No. of vehicles available for parking per year (vehicles/year)	520,000

<b>Space Type</b>	<b>Round Trip Distance to/from Parking Stalls and Parking Lot Entry (miles/vehicle)<sup>c</sup></b>	<b>Distance Traveled Each Year to Utilize Parking Lot (miles/year)</b>
Parking Lot	4.73	2,457,867

<sup>a</sup>Equivalent to number of possible vehicles in parking lot per shift.

<sup>b</sup>Equivalent to turnovers per day (1\* 12-hour shift).

<sup>c</sup>Round trip distance is considered worst case.

Percentage of Vehicle Classification in Parking Lot		
Vehicle Classification		Parking Lot
LDGV	Light duty gasoline vehicles (passenger cars)	55%
LDDV	Light duty diesel vehicles (passenger cars)	10%
LDGT1	Light duty gasoline truck 1	20%
LDDT12	Light duty diesel truck 1 & 2	12%
MC	Motorcycles (gasoline)	3%
Total		100%

Starts per Vehicle Class (starts/day)<sup>a</sup>

Vehicle Classification		Years Old <sup>b</sup>																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LDGV	Light duty gasoline vehicles (passenger cars)	11.00	13.75	11.00	5.50	2.75	2.75	2.20	1.65	1.10	0.55	0.55	0.55	0.55	0.55	0.55	0	0	0	0	0	0	0	0	0	0
LDDV	Light duty diesel vehicles (passenger cars)	2.00	2.50	2.00	1.00	0.50	0.50	0.40	0.30	0.20	0.10	0.10	0.10	0.10	0.10	0.10	0	0	0	0	0	0	0	0	0	0
LDGT1	Light duty gasoline truck 1	4.00	5.00	4.00	2.00	1.00	1.00	0.80	0.60	0.40	0.20	0.20	0.20	0.20	0.20	0.20	0	0	0	0	0	0	0	0	0	0
LDDT12	Light duty diesel truck 1 & 2	2.40	3.00	2.40	1.20	0.60	0.60	0.48	0.36	0.24	0.12	0.12	0.12	0.12	0.12	0.12	0	0	0	0	0	0	0	0	0	0
MC	Motorcycles (gasoline)	0.60	0.75	0.60	0.30	0.15	0.15	0.12	0.09	0.06	0.03	0.03	0.03	0.03	0.03	0.03	0	0	0	0	0	0	0	0	0	0

<sup>a</sup>Data to be used in MOBILE6

<sup>b</sup>The Starts Per Day utilized in the MOBILE6 STPERD2.D command file is the percentage of starts per day times the percent age (values needed to be normalized to 100%).

**Fugitive Emissions Factor from Road Dust - Hill Air Force Base**

<b>Pollutant</b>	<b>Particulate Size Multiplier (k, Pounds/VMT)</b>	<b>Silt Loading (sL, g/m<sup>2</sup>)<sup>b</sup></b>	<b>Average Weight of Vehicles (W, Tons)</b>	<b>EF for 1980's Vehical Fleet (C, g/m<sup>2</sup>)<sup>c</sup></b>	<b>Number of Days in Averaging Period (N, days)</b>	<b>Number of Days with 0.01 in. Precipitation (P, days)</b>	<b>Emission Factor (T/VMT)<sup>a</sup></b>
PM-10	0.016	0.3	2	0.00047	365	90	1.05E-06

<sup>a</sup>EF =  $\frac{[k \cdot (sL/2)^{0.65} \cdot (W/3)^{1.5}] - C}{2000} \cdot (1 - P/4 \cdot N)$  -- AP-42, Paved Roads - Equation 2, 12/03 Edition.

<sup>b</sup>From Table 13.2.1-3, AP-42 - Paved Roads, 12/03 Edition. Assumes four months of winter conditions with an ADT Category of 500 - 5,000:  $(0.75 \cdot 0.2) + (0.25 \cdot 0.2 \cdot 3.0) = 0.3$

<sup>c</sup>From Table 13.3.1-2, AP-42 - Paved Roads, 12/03 Edition.

**Fugitive Emissions from Road Dust due to Increase in Parking Areas - SLC International Airport**

<b>Pollutant</b>	<b>Emission Factor (T/VMT)</b>	<b>Distance per Year (VMT/year)</b>	<b>Fugitive Emissions from Parking Lot (T/year)</b>
PM-10	1.05E-06	2,457,867	2.58

**Percent of Ages per Vehicle Class (%)<sup>a</sup>**

		Years Old <sup>b</sup>																								
Vehicle Classification		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LDGV	Light duty gasoline vehicles (passenger cars)	20%	25%	20%	10%	5%	5%	4%	3%	2%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
LDDV	Light duty diesel vehicles (passenger cars)	20%	25%	20%	10%	5%	5%	4%	3%	2%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
LDGT1	Light duty gasoline truck 1	20%	25%	20%	10%	5%	5%	4%	3%	2%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
LDDT12	Light duty diesel truck 1 & 2	20%	25%	20%	10%	5%	5%	4%	3%	2%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
MC	Motorcycles (gasoline)	20%	25%	20%	10%	5%	5%	4%	3%	2%	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

<sup>a</sup>Data to be used in MOBILE6 - Starts per Day External Command File

<sup>b</sup>The values depict that there are not any cars 15 years old or older utilizing the parking areas.

### Emissions from Parking Lot - Hill Air Force Base - South Gate Site

Pollutant	Emission Factor (g/VMT)	Emission Factor (T/VMT)	Distance per Year (VMT/year)	Emissions from Parking Lot (T/yr)
VOC <sup>a</sup>	1.954	2.1E-06	2,457,867	5.28
CO <sup>a</sup>	16.585	1.8E-05	2,457,867	44.84
NOx <sup>a</sup>	1.419	1.6E-06	2,457,867	3.84
PM-10 <sup>b</sup>	0.0286	3.1E-08	2,457,867	0.08
SO <sub>2</sub> <sup>b</sup>	0.0388	4.3E-08	2,457,867	0.10

<sup>a</sup>EF from MOBILE6 VOC, NOx and CO output file - All Vehicle Column.

<sup>b</sup>EF from MOBILE6 PM and SO<sub>2</sub> output file - All vehicle column.

### Total Emissions From Parking Lot - Garden Site

Pollutant	Total Emissions From Parking Lot (lb/hr)	Total Emissions From Parking Lot (T/year)
VOC	1.2	<b>5.3</b>
CO	10.2	<b>44.8</b>
NOx	0.9	<b>3.8</b>
PM-10 (Non-Fugitive)	0.0	<b>0.1</b>
PM-10 (Fugitive)	0.6	<b>2.6</b>
SO <sub>2</sub>	0.0	<b>0.1</b>
Offset (Combined NOx, SO <sub>2</sub> and PM-10)	1.5	<b>6.6</b>

## **APPENDIX B**

# **Memorandum of Agreement with State Historic Preservation Office**