

**ENVIRONMENTAL ASSESSMENT  
ROY GATE RELOCATION**

April 2003

Prepared for:

Ms. Kay Winn  
OO-ALC/EMR  
7274 Wardleigh Road  
Hill AFB, UT 84056-5137

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Prepared by:

URS  
756 East Winchester Street, Suite 400  
Salt Lake City, UT 84107

# Report Documentation Page

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## **Finding of No Significant Impact for the Roy Gate Reconfiguration**

### **Description of the Proposed Action**

The U.S. Air Force intends to reconfigure the Roy Gate area and construct a new access roadway to address safety and security issues. The purpose of this Environmental Assessment (EA) is to review environmental impacts associated with the Roy Gate Reconfiguration.

In the proposed action, Roy Gate would be relocated southwest of the current location. The design of the new Roy Gate would incorporate the measures outlined in Air Force Instruction (AFI) 31-210, *Anti-Terrorism/Force Protection (AT/FP) Initiative*. A proposed Incoming Munitions Inspection Station would be designed, incorporating guidelines outlined in Air Force Manual (AFMAN) 91-201, *Explosives Safety Standards*. A proposed road would route Hill Air Force Base traffic to the Roy Gate without compromising the safety of Hill Aerospace Museum patrons. The proposed roadway would be designed to better support the amount of traffic that uses the Roy Gate.

### **Summary of Environmental Impacts**

This section describes the effects that the proposed action would have on the existing conditions at Hill AFB and the typical transportation corridors. The effects or impacts of the proposed action can be beneficial or adverse and short-term or long-term, as discussed below.

#### **Surface Water**

Temporary increases in runoff sediment would occur during construction activities, but this would be minimized by implementing standard construction practices. No long-term impacts to surface water bodies or surface water drainage patterns are expected as a result of implementing the proposed action.

#### **Groundwater**

Groundwater conditions are not expected to be affected by the proposed action.

#### **Geology and Soils**

The proposed action disturbs surficial soils in the course of construction. However, this disturbance would be short-term and minimized by implementing standard construction practices.

#### **Vegetation**

Disturbed vegetation would be replaced under the proposed action. There are no sensitive or endangered plant species in the vicinity of the proposed action. Therefore, there are no anticipated significant impacts to vegetation.

#### **Wetlands**

Wetland #11, the only wetland in the vicinity of the proposed action, is determined to be non-jurisdictional because the wetland is supported by man-made hydrology. Coordination with Army Corps of Engineers may be necessary to obtain a Letter to Proceed prior to construction activities. No adverse impacts are anticipated to jurisdictional wetlands under the proposed action.

#### **Wildlife**

Under the proposed action, some short-term impacts to wildlife habitats and food sources may occur. However, these impacts would not be significant. There are no sensitive or endangered species residing on Hill AFB. There are no significant impacts to wildlife or habitat in the vicinity of the proposed action anticipated from the proposed action.

**Air Quality**

There would be no anticipated significant impacts to air quality from the exhaust emissions caused by construction activities associated with the proposed action. Dust control measures would be implemented to control fugitive dust. No other impacts to air quality are anticipated.

**Cultural Resources**

There are no known cultural resources located within the proposed action location. During construction, measures would be taken to minimize impacts to cultural resources, should any be discovered. Therefore, no adverse impacts are anticipated under the proposed action.

**Land Use**

There would be no impact to current land use in the vicinity of the proposed action.

**Noise**

There are no significant adverse impacts to noise from the proposed action.

**Health and Safety**

There are no adverse impacts to health and safety anticipated under the proposed action. Long-term impacts of the proposed action would improve safety in the Roy Gate area.

**Transportation**

Transportation in the Roy Gate area would improve under the proposed action. Vehicle/pedestrian interaction would be reduced and confusing lane direction shifts would be eliminated.

**Socioeconomic Conditions**

Local equipment suppliers and a local worker base would be utilized under the proposed action. This would generate local revenue.

**Environmental Justice**

Environmental justice analyses for NEPA documents attempt to determine whether a proposed action disproportionately impacts minority and poor populations. Because the Roy Gate Reconfiguration would not result in any significant impacts to the surrounding community, no such analysis was conducted.

**Cumulative Impacts**

There would be no anticipated adverse cumulative impacts expected from the actions required for the Roy Gate Reconfiguration. The safety and security of the Roy Gate area would improve. Disturbed vegetation could be relocated in the general area to result in no effective loss. Stormwater runoff would be maintained by maintaining drainage into Pond #11 and no jurisdictional wetlands would be disturbed.

**Conclusion**

Based on the results of this EA, no significant adverse environmental impacts are expected due to the actions of the Roy Gate Reconfiguration, provided all policies, procedures and regulations are strictly followed. Therefore, in accordance with AFI 32-7061, a Finding of No Significant Impact (FONSI) may be issued, and preparation of an Environmental Impact Statement (EIS) is not necessary.

Hill Air Force Base, Utah

  
Authorized Signature

24 Jul 03  
Date

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There are no known cultural resources located within the proposed action location. During construction, measures would be taken to minimize impacts to cultural resources, should any be discovered. Therefore, no adverse impacts are anticipated under the proposed action.

**Land Use**

There would be no impact to current land use in the vicinity of the proposed action.

**Noise**

There are no significant adverse impacts to noise from the proposed action.

**Health and Safety**

There are no adverse impacts to health and safety anticipated under the proposed action. Long-term impacts of the proposed action would improve safety in the Roy Gate area.

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Transportation in the Roy Gate area would improve under the proposed action. Vehicle/pedestrian interaction would be reduced and confusing lane direction shifts would be eliminated.

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Local equipment suppliers and a local worker base would be utilized under the proposed action. This would generate local revenue.

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There would be no anticipated adverse cumulative impacts expected from the actions required for the Roy Gate Reconfiguration. The safety and security of the Roy Gate area would improve. Disturbed vegetation could be relocated in the general area to result in no effective loss. Stormwater runoff would be maintained by maintaining drainage into Pond #11 and no jurisdictional wetlands would be disturbed.

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Hill Air Force Base, Utah

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Authorized Signature

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Date

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## LIST OF ACRONYMS

AFB	Air Force Base
AFI	Air Force Instruction
AFMAN	Air Force Manual
AFPD	Air Force Policy Directives
AT/FP	Anti-Terrorism/Force Protection
bgs	Below ground surface
CFR	Code of Federal Regulations
COE	Corps of Engineers
DoD	Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FONSI	Finding of No Significant Impact
HC/D	Hazard Class/Division
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
No <sub>x</sub>	Nitrogen oxides
NRHP	National Register of Historic Places
NWP	Nationwide Permit
OSHA	Occupational Safety and Health Act
OU	Operable Unit
SWANCC	Solid Waste Agency of Northern Cook County
USAF	United States Air Force
VOC	Volatile Organic Compounds

## EXECUTIVE SUMMARY

In order to address safety and security issues at the Roy Gate area, the U.S. Air Force intends to reconfigure the Roy Gate area and construct a new roadway. Roy Gate would be relocated southwest of the current location. The proposed road would route Hill Air Force Base traffic to the Roy Gate without compromising the safety of Hill Aerospace Museum patrons. It would also help assure security for the transportation of explosives on and off Base (Air Force Manual (AFMAN) 91-201) and facilitate the implementation of the Anti-Terrorism/Force Protection (AT/FP) Initiative (Air Force Instruction (AFI) 31-210). Additionally, the new roadway would be designed to better support the amount of traffic that uses the Roy Gate.

Based on specific explosive transportation requirements, incoming explosive-laden vehicles must be inspected at a remote area of the Base (AFMAN 91-201). New construction would have to incorporate AT/FP standards (AFI 31-210). Pedestrian safety for Museum patrons needs to be improved, as patrons often cross Wardleigh Road at will to view outdoor exhibits. A new access road is needed to better support the amount of general Base traffic that uses the area.

There were three alternative operations considered and eliminated from further analysis by the U.S. Air Force to address safety issues in the Roy Gate area. These alternatives included closing down Roy Gate, widening Magazine Road, and widening Wardleigh Road and constructing a pedestrian walkway over Wardleigh Road or a pedestrian tunnel beneath Wardleigh Road.

In the Proposed Action, Roy Gate would be relocated southwest of the current location. A four-lane road would be constructed west of the current road to route Base traffic to the relocated Roy Gate. The AT/FP measures outlined in AFI 31-210 would be incorporated in the design of the new Roy Gate. A new explosive-laden vehicle inspection area would be constructed southwest of the new Roy Gate. A two-lane road would be constructed to route explosive-laden vehicles from the new access road to the inspection area. These measures would fulfill the requirements for explosive-laden vehicles outlined in AFMAN 91-201. Hill Aerospace Museum traffic would leave the new access road at Museum Road and cycle back to the current Museum parking lot.

The no action alternative was also evaluated and it is anticipated that it would result in negative impacts to Hill AFB. Safety and security issues related to explosive-laden vehicles, AT/FP measures, general Base traffic, Museum traffic, and Museum patrons would not be resolved under the no action alternative. As more people visit the Museum, general Base traffic increases, and security procedures tighten, the no action alternative may result in a more unsafe situation than is currently experienced.

A summary of the impacts from the proposed action and the no action alternative is provided in Table ES-1. It is not anticipated that the proposed action would have significant adverse environmental impacts. However, the no action alternative would not address the safety and security concerns and may, in time, result in a worse condition.

**Table ES-1**  
**Anticipated Environmental Consequences from the ROY GATE RELOCATION**

<b>Environmental Issues</b>	<b>Proposed Action Alternative Location</b>	<b>No-Action Alternative</b>
Surface Water	Short-term additional sediment runoff during construction.	No impact.
Groundwater	No impact.	No impact.
Geology and Soils	Short-term surficial soil disturbance related to construction activities.	No impact.
Vegetation	Removal of approximately 20 trees. These would be replaced in the vicinity of the proposed action.	No impact.
Wetlands	0.08 acre will be impacted. Coordination with COE and submittal for NWP #39 required.	No impact.
Wildlife	No impact.	No impact.
Air Quality	No significant adverse impact. Negligible exhaust emissions from construction activities. Dust control measures would be implemented to control fugitive dust.	No impact.
Cultural Resources	No significant adverse impact.	No impact.
Land Use	No adverse impact. Land would still serve as a transportation corridor and on outdoor Museum exhibit area.	No impact.
Noise	No significant adverse impact. A slight increase in noise during construction may occur, but this would be short-term and limited to daylight hours.	No impact.
Health and Safety	Reduced potential for traffic/pedestrian and traffic accidents.	Potential for traffic/pedestrian and traffic accidents may increase.
Transportation	Improved transportation facilities.	No impact.
Socioeconomics	No impact.	No impact.
Environmental Justice	No impact.	No impact.

## Section 1

# PURPOSE AND NEED FOR THE PROPOSED ACTION

### 1.1 Introduction

The Roy Gate area of Hill Air Force Base (Hill AFB) is an Entry Control Facility for regular Base traffic, Hill Aerospace Museum traffic, and explosive-laden vehicle traffic. The current configuration of the Roy Gate area and existing traffic loads has caused safety and security concerns in the area. In order to improve the situation at the Roy Gate area and comply with Air Force Manual (AFMAN) 91-201, *Explosives Safety Standards*, and Air Force Instruction (AFI) 31-210, *Anti-Terrorism/Force Protection (AT/FP) Initiative*, Hill AFB intends to construct a new Base access road, a new Incoming Munitions Inspection Station, and relocate the Roy Gate, incorporating the standards outlined in AFMAN 31-210. The purpose of this Environmental Assessment (EA) is to evaluate the proposed action and identify impacts of the proposed action and alternatives.

### 1.2 Background

Hill AFB is located in northern Utah about 25 miles north of Salt Lake City and approximately 5 miles south of Ogden. It was established by congressional order in 1935 and was constructed adjacent to the Ogden Army Arsenal beginning in 1940. In 1955, the Ogden Army Arsenal was transferred from the U.S. Army to the U.S. Air Force, doubling the size of the Base to a total of almost 6,700 acres and 1,171 buildings. The mission of Hill AFB centers on the maintenance and management of aircraft and missiles. Base industrial facilities include aircraft, vehicle, and missile management and support. The area affected, the Roy Gate area, is located at the northwest edge of Hill AFB, adjacent to the Hill Aerospace Museum (Figure 1-1).

Hill AFB has the capability to dissect, machine, and test solid rocket motor propellant and other explosive items. Hill AFB is able to complete aging surveillance of solid rocket propellant, conduct explosive component composition analysis, conduct explosive component and weapon system modifications, perform demilitarization and precious metal recovery, and handle incident investigation. This capability allows Hill AFB to accept the shipment of explosives onto the Base.

AFMAN 91-201, *Explosives Safety Standards*, implements the specific guidance necessary to meet the objectives or Air Force Policy Directives (AFPD) 91-2, *Safety Programs* and DoD 60-55.9-Std., *DoD Ammunition and Explosives Safety Standards*. It establishes a central source for explosive safety criteria and provides detailed requirements for transporting explosives and for operating vehicles and materials handling equipment in explosives locations. AFMAN 91-201 requires that explosives of Hazard Class/Division (HC/D) 1.1, 1.2, and 1.3 be delivered through and inspected at a remote location of Hill AFB. HC/D 1.1 corresponds to materials that exhibit a blast hazard, 1.2 signifies materials that exhibit a fragmentation hazard, and 1.3 corresponds to materials that exhibit a mass fire hazard. At the time the standards were written, the Roy Gate area was the most remote access point on the Base. Currently, the Roy Gate area is generally a remote area of the Base, but the Museum has since been constructed in this area and is undergoing continued expansion.

The current configuration of the Roy Gate area (Figure 1-2) consists of a roadway (Wardleigh Road) that enters Hill AFB at the northwest corner of the Base and heads east toward the Museum. At the Museum, the road turns south toward the Entry Control Facility, the Roy Gate. There is a public parking lot north of the road, immediately west of the Museum, for Museum patrons to park. Entering the Base, Wardleigh

Road is a four-lane road (two lanes for travel in each direction) to the Museum, where it abruptly reduces to 3 lanes. The 3-lane portion of the roadway is comprised of one lane that travels in each direction and a center lane that serves both directions, depending on traffic demand at certain times of day. For example, during the morning, when more motorists are traveling to Hill AFB, the center lane's direction is southward, toward the Base. In the afternoon, when most motorists are leaving Hill AFB, the center lane's direction is northward, off- Base.

The Museum consists of three joined, enclosed buildings containing many exhibits. There are also several outdoor displays for the public's enjoyment. Aircraft that are outdoors are located adjacent to the main building, north and east of Wardleigh Road. Across Wardleigh Road, there are additional outdoor displays in a cultivated area with sidewalks installed between each display. These displays include monuments and statues. Further south, on the west side of Wardleigh Road, there is a missile launcher on display and a planned missile park. A new parking lot is planned in the same general area as the planned missile park.

In addition to regular Base and Museum traffic, the Roy Gate also serves as an Entry Control Facility for explosive-laden vehicles. Vehicles transporting HC/D 1.1, 1.2, and 1.3 explosives must access the Base in an isolated area, which is the Roy Gate area. As they enter Hill AFB property, they are currently routed along a narrow one-lane roadway, Magazine Road, located west of Wardleigh Road (See Figure 1-2). Magazine Road is a paved roadway with steep shoulders into Wetland #11 on the east side and the Davis-Weber Canal on the west side. Magazine Road is located approximately 35 feet from the closest outdoor exhibit. To turn onto Magazine Road, because of the tight corner, vehicles often must stop, reverse, and then advance again. This slows traffic flow at the corner until the vehicle is able to drive onto Magazine Road. At the end of the road are a locked gate and a telephone. Security personnel are called to inspect the vehicles and review the appropriate paperwork. The explosive-laden vehicles are left on Magazine Road until the inspections are completed. Upon satisfactorily passing the inspection, the gate is unlocked and the vehicles are allowed to enter the Base and continue on to their final destination. If a vehicle doesn't pass inspection, the vehicle must reverse along Magazine Road, cross Wardleigh Road (in reverse), and proceed west to either transport the explosive load back to the supplier or remedy the situation so as to pass inspection. This scenario presents a logistical problem if there is one or more explosive-laden vehicles awaiting inspection parked behind a vehicle that has failed an inspection.

The current gatehouse at the Roy Gate is a small temporary structure placed along the side of Wardleigh Road. Concrete barriers are placed between each of the three lanes near the gateshack.

### **1.3 Need for the Proposed Action**

After the events of September 11, 2001, a keener awareness of safety and security permeated the country. Safety and security at military installations, in particular, came under review. The current situation at the Roy Gate area presents several safety and security concerns. The foremost concern is holding and inspecting explosive-laden vehicles in close proximity to the Museum and the general public. This presents a safety concern to the public as well as a security concern to the military.

By holding and inspecting explosive-laden vehicles through the same area that Museum patrons and regular Base traffic frequent, the potential of a mishap is high. If the vehicle fails inspection and has to reverse down Magazine Road and across Wardleigh in order to turn around, the possibility of an auto or pedestrian/vehicle accident is heightened. AFMAN 91-201 states that explosive-laden vehicles must be brought in, inspected, and held if necessary, at a remote area of the Base. Under the current configuration, there are numerous people visiting the Roy Gate area. In order to comply with AFMAN 91-201, a more

remote location must be developed/utilized to process explosive-laden vehicles.

In response to terrorist activities experienced in the United States on September 11, 2001, the U.S. Armed Forces reviewed security measures. AFI 31-210, *AT/FP Program Initiative*, outlines measures that ensure the safety and security at military bases to help support each base's mission. The current Roy Gate configuration does not meet the criteria set forth in AFI 31-210. To meet the standards, the Roy Gate configuration must include active barriers for final denial and passive barriers for containment and perimeter security. Streetwork should include curbs, gutters, and pavements to accommodate Base traffic. Other requirements are personally owned vehicle and commercial vehicle gatehouses and a canopy structure with associated lighting and utilities.

Another safety concern is the lane configuration of Wardleigh Road. The manner in which the four-lane road is reduced to three lanes presents a high potential for head-on collisions. This area is adjacent to the Museum with outdoor displays located across the roadway. Museum patrons regularly cross Wardleigh Road on foot to enjoy these displays. This presents the potential for vehicle/pedestrian accidents.

The traffic design of Wardleigh Road in the Roy Gate area is hazardous to property and human health. Immediately after Wardleigh Road curves southward, the four-lane road diminishes to three, with the center lane designed to alternate directions of travel, depending on traffic demand and time of day. For people not accustomed to how the lane shifts work, the abrupt lane shift and confusing lane markings could be surprising. A head-on collision or less severe vehicle accident could result. In order to handle the heavy traffic of the area efficiently, a more straightforward and less-confusing roadway design must be implemented.

Wardleigh Road travels through the middle of the Museum area. The general public frequents this area to enjoy the various indoor and outdoor exhibits the Museum offers. People regularly walk across Wardleigh Road to view the outdoor exhibits located on the west side of Wardleigh Road. There are no pedestrian crossings, stop signs, or traffic lights in this area. With traffic heading in either direction focusing on correctly navigating the lanes, the chance of a vehicle/pedestrian accident is high.

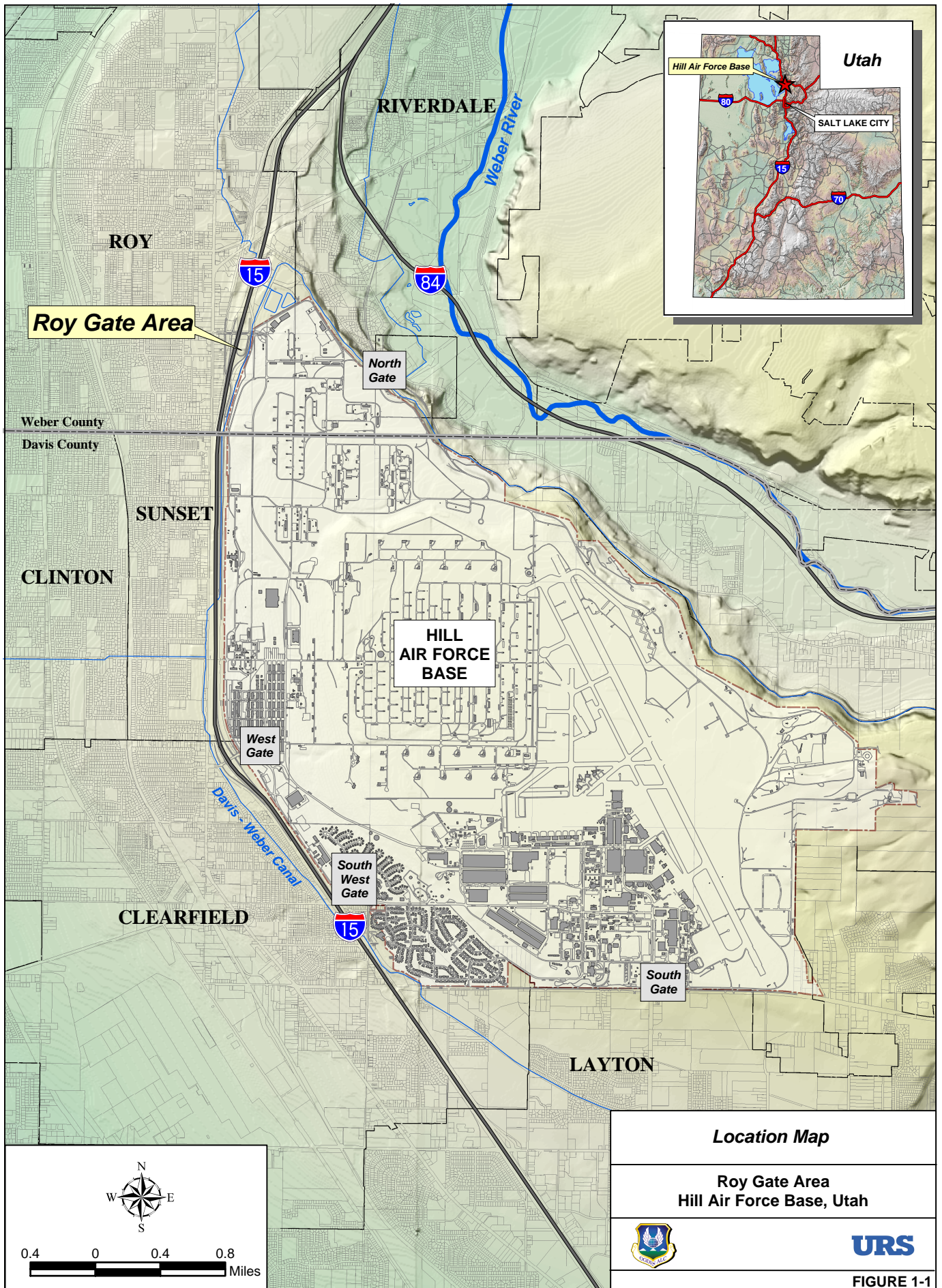
To address these concerns and maintain a secure and safe Entry Control Facility to Hill AFB at this location, the new roadway, a new Incoming Munitions Inspection Station, and a new Entry Control Facility are necessary.

Commercial vehicles currently enter and exit the Base through the truck gate, which is the Southwest Gate. The Southwest Gate is frequently plagued with major traffic slowdowns, due to the fact that the gate was not designed to handle the number of vehicles in addition to commercial vehicles that currently use it. With the AFI 31-210 guidelines incorporated into the proposed Roy Gate design, commercial vehicles will be able to utilize the Roy Gate for Base access.

#### **1.4 National Environmental Policy Act Requirements for Air Force Actions**

The National Environmental Policy Act (NEPA) of 1969 requires federal agencies to analyze the potential environmental impacts of a proposed action and to evaluate reasonable alternative actions. The analysis results are used to make decisions or recommendations on whether and how to proceed with those actions. AFI 32-7061, *Environmental Impact Analysis Process*, describes the process of preparing an EA for proposed actions on Air Force property. Based on the EA, either a Finding of No Significant Impact (FONSI) or an Environmental Impact Statement (EIS) is prepared. Both the AFI 32-7061 guidance and

the implementing regulations of NEPA (40 *Code of Federal Regulations* (CFR) 1500) were followed in preparing this EA.





## **Section 2**

### **DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

This section describes the alternatives that were considered by the U.S. Air Force for the new access road, the new Incoming Munitions Inspection Station, and the relocation of the Roy Gate.

#### **2.1 Selection Criteria**

The Roy Gate area serves Base traffic, explosive-laden vehicles, and Museum traffic and pedestrians. Safety and security must be maintained in the design of the area. The current configuration of the Roy Gate area does not facilitate a safe transportation corridor for Base traffic, including explosive-laden vehicles, tourist traffic, and pedestrian use. To address these concerns, the Roy Gate area should be reconfigured. The reconfiguration of the Roy Gate area should meet the following criteria:

- Provide a safe environment that limits potential pedestrian and vehicle hazards.
- Explosive-laden vehicles should not be held for inspection in such close proximity to Museum exhibits.
- The Incoming Munitions Inspection Station should meet the requirements of AFMAN 91-201.
- An appropriate turn-around area and two-way traffic capabilities should be incorporated into the design to facilitate the movement of explosive-laden and other large vehicles.
- The lane configuration of Wardleigh Road should be improved to avoid confusing lane mergers.
- AT/FP measures indicated in AFI 31-210 should be incorporated into the design of the Entry Control Facility.
- Base traffic should be rerouted away from the middle of Museum property and exhibits.

#### **2.2 Description of Alternatives**

In addition to the No Action Alternative, there were four alternatives considered by the U.S. Air Force to address the safety and security issues at the Roy Gate area. These alternatives include the proposed action, closing down the Roy Gate, widening Magazine Road, and widening Wardleigh Road and installing a pedestrian walkway over Wardleigh Road or an underground pedestrian tunnel beneath Wardleigh Road.

##### **2.2.1 Proposed Action Alternative**

The selection criteria presented in Section 2.1 would be fulfilled by the proposed action. In the proposed action, a new access road would be constructed that would take all Base traffic west of the Museum to New Jersey Road, where the new Entry Control Facility, Roy Gate, would be located. There would be a preliminary inspection lane constructed on the right shoulder of the road, where explosive-laden vehicles would be briefly inspected. Upon passing this preliminary inspection, the explosive-laden vehicles would be routed along a new 2-lane road to the west that would terminate at a parking area, the proposed Incoming Munitions Inspection Station. Here they would undergo a more extensive inspection. The Incoming Munitions Inspection Station would be located approximately 1,600 feet south of the outdoor Museum exhibits. The inspection station access road and the inspection station would be fenced and provide a wider and safer roadway for explosive-laden vehicles. Museum traffic would be routed to the east and back around to the Museum before reaching the Roy Gate. This would take Museum traffic past the planned new missile park and other outdoor exhibits on the way to the Museum parking lot. The remaining traffic would be routed to the Roy Gate and, with authorization, be allowed to continue on to

their final destination (Figure 2-1). This routing would remove Base traffic from travelling through the middle of the Museum property and exhibits, providing for safer pedestrian crossing areas for Museum patrons' use.

The configuration of the new Roy Gate would incorporate AT/FP measures indicated in AFI 31-210. These measures would include active barriers for final denial and passive barriers for containment and perimeter security. Streetwork would include curbs, gutters, and pavements to accommodate Base traffic. Other measures include personally owned vehicle and commercial vehicle gatehouses and a canopy structure with associated lighting and utilities.

Access to Magazine Road would be eliminated. By eliminating access to Magazine Road, the potential for a vehicle to inadvertently access at the wrong point would be removed. The requirement to patrol the road for unauthorized vehicular access would be diminished. The potential of backing up traffic around the entrance because of large trucks having to make sharp turns onto Magazine Road or reversing along Magazine Road in order to turn around would also be eliminated.

Museum traffic would be routed back to the Museum along what would be called Museum Road. Patrons would be able to view outdoor exhibits along Museum Road while traveling to the main parking lot. Once at the Museum, patrons would experience safer conditions when viewing exhibits.

The proposed access road would take all Base traffic, including explosive-laden vehicles, out of the middle of the Museum property, providing a safer environment for Museum patrons to enjoy the outdoor exhibits. It would provide a more secure, isolated area for the Incoming Munitions Inspection Station and would incorporate the AT/FP measures of AFI 31-210 in the design of the Entry Control Facility. The proposed road would impact Wetland area #11 and the associated drainage channel wetland. Section 4.5, Wetlands, discusses wetland impacts in more detail. The construction of the new road would result in the removal of approximately twenty (20) trees. Section 4.4, Vegetation, discusses impacts to vegetation impacts more completely.

### **2.2.2 Closing Down the Gate**

Closing down the Roy Gate was analyzed as an alternative during the initial planning stages. By closing down the gate, there would not be any traffic entering the Base at this area. It was determined this alternative was infeasible for several reasons. By closing the Roy Gate, Museum patrons would have to undergo security checks at different gates in order to access Hill AFB to approach the Museum from the south. This would result in unnecessary traffic concentrations along primary roadways and also increases the possibility of a security breach due to increased traffic activity at other gates. Explosive-laden vehicles, no longer able to access the Base through the Roy Gate, would be required to use a different gate. Other existing gates at Hill AFB are in more populous areas. These areas, according to AFMAN 91-201, are unacceptable routes for explosive-laden vehicles to use to enter the Base. This alternative was eliminated from further consideration because it did not meet the selection criteria.

### **2.2.3 Widening Magazine Road**

By widening Magazine Road, explosive-laden vehicles would have more room on their access route. However, there still would not be enough room to turn around, should they fail inspection. This alternative does not address the tight turn that must be made by explosive-laden vehicles to enter Magazine Road. Also, this alternative does not provide a safe and secure Incoming Munitions Inspection Station that is located away from general public access points, such as outdoor Museum exhibits. Additionally, widening Magazine Road presents some design challenges, in that a large amount of fill would be required to establish a wider roadway. Wetland area #11 would be severely impacted and the

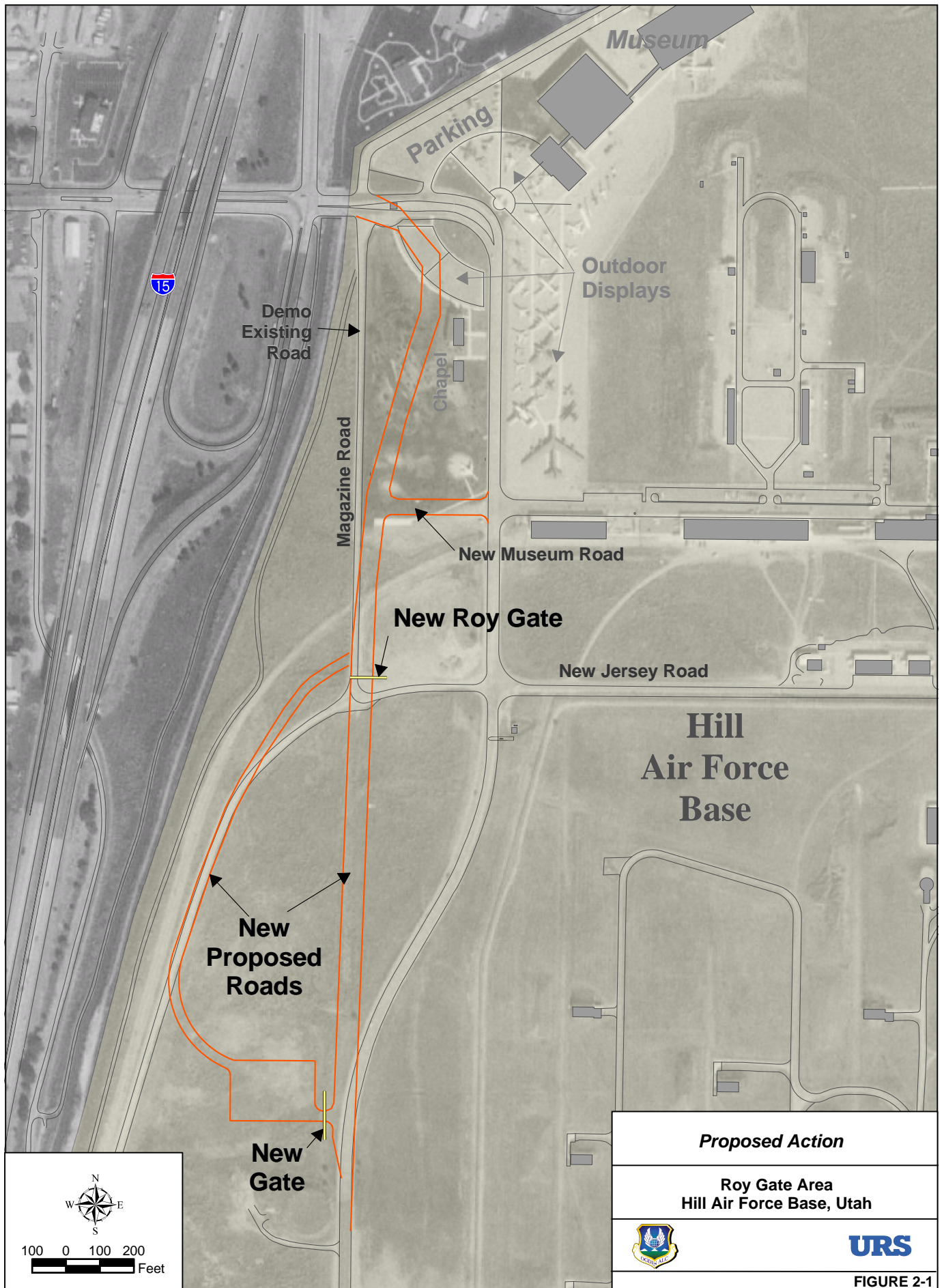
Davis-Weber Canal may be impacted by this option. This alternative does not reroute other Base traffic. It would not alleviate concerns relating to vehicle/pedestrian accidents or lane reductions on Wardleigh Road. Since this alternative does not fully meet the selection criteria, it was eliminated from further consideration.

#### **2.2.4 Widening Wardleigh Road and constructing Pedestrian Crossings**

Widening Wardleigh Road was initially considered as an alternative to meet the selection criteria. Coupled with a pedestrian walkway over Wardleigh Road or an underground pedestrian tunnel beneath Wardleigh Road, it was thought this alternative would adequately address the vehicle/pedestrian concerns. Other selection criteria, however, would not be addressed. This alternative would not allow the amount of space required to implement AT/FP measures at the Roy Gate. Additionally, pedestrian overpasses were determined to hinder the movement of Museum exhibits and potentially the passage of large vehicles to such a degree that it would be infeasible to install overpasses in this area. A study of existing underground pedestrian tunnels in other areas of the Base revealed that they were underutilized. Due to this lack of use, underground pedestrian tunnels are not an efficient solution to pedestrian crossing considerations. Also, this alternative does not provide for a more secure, isolated Incoming Munitions Inspection Station, nor allow for the safer transport of explosives through the Roy Gate area. Because this alternative did not meet all the selection criteria, it was eliminated from further consideration.

#### **2.2.5 No Action Alternative**

The No Action Alternative would not address the safety and security issues currently experienced in the Roy Gate area. Furthermore, as the Museum expands, more people access Hill AFB through the Roy Gate, and explosive-laden vehicles continue to be shipped on-Base, the situation could worsen. The no action alternative does not solve the identified problems, nor complies with AFMAN 91-201, *Explosives Safety Standards* or AFI 31-210, *AT/FP Standards*. It does not meet the project purpose and need. However, in accordance with NEPA and AFI 32-7061, it has been evaluated in this EA.



## **Section 3**

### **DESCRIPTION OF THE EXISTING ENVIRONMENT**

This section describes the general environment at Hill AFB. The following sections characterize the physical conditions, natural and historic resources, environmental quality, land use, health and safety, transportation, and socioeconomic conditions at Hill AFB for the current Roy Gate configuration.

#### **3.1 Surface Water**

Within the boundaries of Hill AFB, there are no streams, rivers or lakes. Ponds and wetlands are present. Three drainage systems located off-Base and several drainage ponds located throughout the Base provide drainage for Hill AFB. The proposed action area consists of mostly undeveloped and unpaved ground. Surface water in this area either infiltrates the ground or flows along the ground or drainage lines into Pond #11.

#### **3.2 Groundwater**

Hill AFB is located in the Weber Delta Sub-District. Two of the three primary aquifers are the principal aquifers of the East Shore area. The Sunset and the Delta aquifers are deep, confined aquifers with depths below ground surface (bgs) of 250 to 400 feet and 500 to 700 feet, respectively. These aquifers are recharged through subsurface flow infiltrating fractures and joints in the Wasatch Range and from the underflow of a deep unconfined aquifer near the mountain front. The third aquifer overlays the Sunset and the Delta aquifers, and is an unnamed, deep unconfined aquifer (Montgomery Watson, 1998).

Operable Unit (OU) 6 is located east of the proposed action location. This OU has a TCE-contaminated groundwater plume and is undergoing remediation. The plume does not extend under the area of the proposed action. A monitoring well, U6-29, is located within the proposed roadway, though it is no longer being used.

#### **3.3 Geology and Soils**

Hill AFB is located on a delta created by the flow of the Weber River into ancient Lake Bonneville. Surface soils consist primarily of sand, gravel, silts, and clays. They are mostly well drained and are generally 10-30 feet thick (Montgomery Watson, 1998). Soils in the proposed action area fall within the description of the general soils on Base.

#### **3.4 Vegetation**

The proposed action location consists of mowed, semi-improved ground and unmowed, undeveloped ground. The semi-improved area is mowed frequently with maintenance as a pest control measure. Introduced grasses and annual forbs such as cheat grass and crested wheatgrass generally represent these areas. A portion of the proposed action area is planted with trees. Currently, there are no known endangered or threatened vegetative species located within Hill AFB (USAF, 1989).

#### **3.5 Wetlands**

There are twenty (20) man-made and natural wetlands situated at Hill AFB. Wetland Area #11 is located adjacent to the proposed action location. Wetland Area #11, or Pond #11, is approximately 0.55 acre, of which approximately 0.08 acre is marsh. The surrounding area has been intensively landscaped, mowed, and seeded with Kentucky bluegrass. Stormwater runoff from paved areas is the primary source of the hydrology. A perched water table may sustain water levels at or near the land surface throughout the year in the isolated marsh area.

### **3.6 Wildlife**

Wildlife at Hill AFB includes large and small mammals, birds, amphibians and reptiles common to the mountain-brush habitat and the western United States. Mule deer, fox, coyotes, lizards, pheasants, meadowlarks, magpies, mallard ducks, and blue herons have been identified at Hill AFB. Two threatened or endangered species have been noted in the immediate vicinity of Hill AFB – peregrine falcons and bald eagles (Montgomery Watson, 1998). Either of these species may occasionally enter the Base boundaries, but neither resides on Base. There are no known endangered or threatened wildlife species or habitat located in the vicinity of the proposed action location (Hill AFB Natural Resources).

### **3.7 Air Quality**

Hill AFB is located in Davis County and Weber County, Utah. Ogden City, which is located in Weber County, is designated as a non-attainment area for particulate matter (PM<sub>10</sub>) and a maintenance area for carbon monoxide (CO), two of the National Ambient Air Quality Standards (NAAQS) designated by the Environmental Protection Agency (EPA). Weber County, excluding Ogden City, is designated as an attainment area for all pollutants. The NAAQS also include the criteria pollutants of nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), ozone (O<sub>3</sub>), and lead (Pb). Davis County is designated by the EPA as a maintenance area for O<sub>3</sub> and as an attainment area for all other NAAQS.

### **3.8 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. Archaeological resources are where prehistoric and historic activities measurably altered the earth (for example, pithouses and hearths) or where physical remains were deposited (for example, projectile points, pottery, cans, and 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 National Register of Historic Places (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.

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

Currently, there are no NRHP listed properties on Hill AFB. Many potential eligible historic architectural resources (over 300) have been identified within Hill AFB (Hill AFB Cultural Resources Preservation Office). The majority of these date to the late 1930s and early 1940s and include some Cold War era properties. There are two proposed NRHP districts: the Hill Field Historic District, and the Ogden Arsenal Historic District. The proposed action location is outside the proposed historic districts and there are no historic resources associated with the Proposed Action location.

There are no known archaeological resources on the Base. A few prehistoric artifacts have been found, but not enough to warrant archaeological site status.

No traditional resources have been identified at Hill AFB.

### **3.9 Land Use**

The Roy Gate area serves as a major entrance and exit point to Hill AFB for employees, visitors, and others who do business with the Base. It also serves as the entrance point to the Hill Aerospace Museum. The Museum includes three large buildings that house indoor exhibits and numerous outdoor exhibits. Besides the established roadway, Wardleigh Road, and the outdoor exhibits in the area, the area also consists of undeveloped land.

The proposed action lies west of the OU 6 area. Due to potential environmental effects, activities that occur in OU areas that would disturb the soil or groundwater, or that would interfere with remedial action, equipment or facilities require the concurrence of the Environmental Management Directorate (EMR). However, the proposed action does not lie within the boundaries of OU 6.

### **3.10 Noise**

Hill AFB supports aircraft and logistical operations. In routine daily operations, there is noise from aircraft traffic, large transportation vehicular traffic, maintenance activities, logistical activities, and supporting operations. The noise level at the proposed action location is consistent with the operations at Hill AFB.

### **3.11 Health and Safety**

Safety at Hill AFB is the responsibility of the Ogden Air Logistics Safety Office, which has four divisions: Weapons Safety, Flight Safety, Ground Safety, and Systems Safety. Safety procedures and military transport guidance assure the safety of the transportation of explosives onto Hill AFB. The Ground Safety Division administers safety of traffic and pedestrians. The health assurance of personnel at Hill AFB is the responsibility of Bioenvironmental Engineering Services. Individuals' safety in such close proximity to explosive-laden vehicles is identified as a concern. Other safety concerns in the Roy Gate area are pedestrian safety and vehicle safety where Wardleigh Road narrows from 4 lanes to 3 lanes.

### **3.12 Transportation**

Hill AFB is easily accessible by various highway roads. The Utah north-south Interstate Highway, I-15, bounds Hill AFB to the west. An east-west highway, Route 193, bounds Hill AFB to the south. To the east, Highway 60 and Interstate 84 parallel the eastern edge of the Base. Highway 26 crosses I-15 to the north of Hill AFB. Entry into Hill AFB can occur through one of four gates: the South Gate, Southwest Gate, West Gate, and the Roy Gate. Once on Hill AFB, internal roadways and travel routes are well established. The proposed action site is accessed through the Roy Gate. Wardleigh Road and Magazine Road currently exist in this area.

### **3.13 Socioeconomics**

Hill AFB, located in both Davis and Weber Counties, employs approximately 10,000 civilians in support of approximately 5,000 military personnel. In 2000, the combined population of Davis and Weber Counties was 435,527 (U.S. Census Bureau, 2000). These counties encountered a growth rate of approximately 4 percent between 1998 and 2000. Hill AFB is a major employer in this two-county area.

## **Section 4**

### **ENVIRONMENTAL CONSEQUENCES**

This section describes the effects the proposed action and the no action alternative would have on the existing conditions at Hill AFB. The effects or impacts of the alternatives could be beneficial or adverse and short-term or long-term, as discussed below.

#### **4.1 Surface Water**

Construction activities would expose soil and increase the chance for runoff and sedimentation in Pond #11. However, these impacts would be temporary, occurring only during construction. Standard construction practices would be implemented to minimize potential short-term impacts. These may include:

- Minimizing the size of the disturbed area associated with the construction site;
- Stockpiling all removed soils and protecting them from wind and water erosion;
- Installing silt fences around the construction site to protect Pond 11 from sedimentation;
- Replacing or removing stockpiled soils following construction; and
- Re-vegetating disturbed areas where possible.

Long-term surface water impacts anticipated for the proposed action could include a potential slight degradation in surface water quality caused by increased surface runoff from the new road and parking area. This impact could be mitigated by grading the surfaces to divert surface water runoff into Pond #11 or to undeveloped areas and allowing it to percolate into the ground.

Under the no action alternative, there would be no impact to surface waters.

#### **4.2 Groundwater**

Groundwater conditions are not expected to be affected by either the proposed action or the no action alternative. The groundwater depth at the proposed action location is approximately 40 feet bgs. The excavation depth of the new roadway is not expected to reach this depth.

#### **4.3 Geology and Soils**

The construction activities of the proposed action are not expected to adversely impact the surrounding geology, though surficial soils would be disturbed in the construction process. To reduce the potential effects of wind and water erosion on exposed soils during construction, the following efforts would be enacted:

- Minimization of the disturbed area size;
- Removal and protection of stockpiled soils; and
- Replacement of stockpiled soils where possible.

With the implementation of these efforts, no significant adverse impacts to geology or soils are expected from the construction activities of the proposed action.

There would be no impacts to geology and soils from the no action alternative.

#### **4.4 Vegetation**

The vegetation located in and around the construction area for the new roadway would be affected from the construction activities. However, there are no threatened or endangered plant species identified at the proposed action location. The vegetation in the proposed action location is comprised of local and introduced vegetation. The area that would be affected by construction activities would be limited as much as possible to that which is within the footprint of the proposed roadway. The removal of approximately 20 planted trees is likely. After construction is complete, the areas adjacent to the roadway, and any other areas, would be re-vegetated. The trees that are removed may be relocated in the general area. No significant impacts to the local vegetation are expected from the proposed action.

There would be no construction activity under the no action alternative. Since no disturbances would occur for the no action alternative, no impacts to vegetation are anticipated.

#### **4.5 Wetlands**

A wetland is defined as:

“Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (EPA, 40 CFR 230.3 and CE, 33 CFR 328.3)”

To be considered jurisdictional, a wetland must meet the definition of a wetland, be an open body of water (such as a lake or a pond), and the hydrology must not be supported solely by man-made hydrology. The hydrology of Pond #11 is supported solely by man-made hydrology due to development activities directing stormwater runoff into the wetland.

In 1993 a planning level delineation was completed at Pond #11. Of the 0.7 acre that was evaluated, 0.1 acre was considered jurisdictional. A new delineation was completed in November 2002, when it was found that 0.55 acre is jurisdictional and that the proposed action will impact approximately 0.08 acre. Because of the size and projected impacts to the wetland, Nationwide Permit (NWP) #39 has been selected for submittal to the COE for authorization of projected fill activities. The provision of NWP 39 requires notification and allows fill activities up to 0.50 acre when authorized. The anticipated fill impacts of the proposed action will be 0.08 acre.

Additionally, under a January 2001 U.S. Supreme Court ruling concerning Clean Water Act jurisdiction over isolated waters (*Solid Waste Agency of Northern Cook County v. COE, the SWANCC ruling*), the court ruled that application of 33 CFR 328.3(a)(3) was invalid. In 33 CFR 328.3(a)(3), the definition of wetlands is expanded to include, “All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce...” It was ruled that waters covered solely by subsection (1)(3) that could affect interstate commerce solely by virtue of their use as habitat by migratory birds are no longer considered waters of

the United States. The delineators believe that Pont #11, which is a stormwater collection system with a terminal pond, is a non-navigable, isolated, intrastate water under subsection (a)(3).

Under the no action alternative, no impacts to wetlands are anticipated.

#### **4.6 Wildlife**

There are no threatened or endangered species identified on Hill AFB. In the proposed action area, there is no significant habitat identified for protected wildlife. Therefore, under the proposed action, there are no anticipated adverse impacts to wildlife.

Under the no action alternative, wildlife habitats, food sources, and species would not be impacted.

#### **4.7 Air Quality**

There would be no long-term impacts to air quality associated with the proposed action. Construction activities associated with the proposed action would result in some short-term emissions of regulated pollutants that would only occur during the construction period. These emissions would include particulate matter from fugitive dust and criteria pollutants from fuel-fired construction equipment. However, these emissions and related impacts would be temporary and less than significant in mass, concentration, and duration. Construction-related dust would be short-term. The Utah Administrative Rules, R307-309-4 and R307-309-6, apply to construction activities on land areas over ¼ acre in size. They require implementing measures to prevent fugitive particulate matter from becoming airborne. Such measures may include:

- Providing synthetic cover;
- Watering and/or providing chemical stabilization; and/or
- Providing wind breaks.

These measures or others would be implemented during the construction process as appropriate.

As a federal facility in a designated “maintenance” area for ozone, any actions at Hill AFB must undergo review in accordance with the Federal Conformity Rule (40 CFR 93.153). Appendix B contains the air emission calculations for the exhaust emissions associated with the construction of the new road and parking area. As shown in Appendix B, construction equipment would not be expected to emit greater than 1 ton of VOCs or greater than 13 tons of NO<sub>x</sub>. Therefore, emissions from the proposed action would not exceed the *de minimis* levels in the Conformity Rule (i.e., 100 tons per year for VOCs and 100 tons per year for NO<sub>x</sub>). As a result, the Air Force is not required to prepare a full conformity determination for the proposed action.

The no action alternative would have no impact on air quality.

#### **4.8 Cultural Resources**

Currently, there are no known cultural resources in the location of the proposed action. If any cultural resources were observed in the area during any phase of construction, action in the immediate vicinity would stop, and the Hill AFB Cultural Resources Manager would be contacted. Work would proceed under the conditions defined by the Cultural Resources Manager and in accordance with the Hill AFB Draft 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.

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.

#### **4.9 Land Use**

In general the Roy Gate area is a transportation corridor for vehicles entering and exiting Hill AFB. Under the proposed action, the area would remain a transportation corridor. The Museum buildings, located nearby, would not be affected. The proposed road would pass through an existing outdoor Museum exhibit area and adjacent to a planned outdoor Museum exhibit area. One display in the existing outdoor exhibit area, a monument, would have to be removed prior to construction activities. This monument could be relocated in the general area to maintain the general exhibit experience. Construction vehicles would have to remain within the project corridor, so as not to disrupt the remaining outdoor exhibits. Coordination with Museum personnel would occur prior to construction activities to assure preservation of outdoor exhibits. Access to the outdoor exhibits may be limited during construction, however, after construction is completed, the land use in these areas would continue to be outdoor Museum exhibits. The southern portion of the proposed action would occur within undeveloped remote land near the existing transportation route. The land use in the general area of the proposed action would remain the same during and after construction in the southern portion of the proposed action.

The proposed action is located west of OU 6 and the proposed road would impact monitoring well U6-29. Well U6-29 is not currently being used. However, access to well U6-29 would be maintained for future use. Since the proposed action is not within the boundaries of OU 6, and access to monitoring well U6-29 would be maintained, there are no adverse impacts associated with OU 6 anticipated for the proposed action.

Under the no action alternative, the land use would remain the same. However, in order to comply with AFMAN 91-201, changes to land use may be necessary to allow for the safety and security in transporting explosives on-Base.

#### **4.10 Noise**

Construction activities of the proposed action would create short-term noise impacts during daylight hours. The construction activity may effect the neighboring Museum. Under current conditions, Base traffic is continually traveling in the area. The added noise impact of construction activities is not expected to be a significant increase over current noise levels. Residential areas are not located near the proposed action location; therefore, no noise impacts to residential areas are expected. There would be no long-term noise impacts, as the result of the proposed action is to redirect traffic and not to increase traffic. Long-term noise impacts to the Museum may be a reduction in noise levels because traffic would be redirected further away from the Museum. There are no anticipated adverse impacts associated with noise for the proposed action.

Under the no action alternative, noise levels would not change from the current levels. Therefore, no adverse impacts associated with noise are anticipated from the no action alternative.

#### **4.11 Health and Safety**

The typical health and safety hazards associated with small construction sites using heavy-duty construction equipment would be present for the proposed action. All Occupational Safety and Health Administration (OSHA) guidelines would be followed during construction work to minimize potential risk to workers. The general public would be kept a safe distance from construction work to minimize potential risk to non-workers. Upon completion of the proposed action, the redirection of Base traffic would reduce the accident potential in the area.

Under the no action alternative, no construction activities would take place, therefore, no potential impacts to health and safety would arise as a result of construction. However, pedestrian and automobile accident potential would not be reduced if Base traffic were not redirected.

#### **4.12 Transportation**

For the proposed action, short-term traffic delays may be necessary during construction. Delays would most likely occur when the proposed roadway is joined to the main road. Occasionally, minor traffic delays may occur to facilitate the movement of construction vehicles. These delays would be insignificant and would be of short duration. There are no anticipated long-term traffic delays anticipated. Under the proposed action, Base traffic would be redirected away from the Museum and the proposed roadway would consist of 4 lanes (2 in each direction), as opposed to the current configuration. This configuration would ease traffic congestion and minimize risk for potential traffic and traffic/pedestrian accidents.

For the no action alternative, the transportation scenario would remain unchanged from the current scenario. The risk of traffic and traffic/pedestrian accidents would remain at current levels, and potentially could increase if either motorized or pedestrian traffic increased. The planned outdoor Museum exhibits would contribute to an increase in pedestrian traffic and also could distract motorists while driving. An increase in traffic could also escalate congestion in the area.

#### **4.13 Socioeconomic Conditions**

Construction activities for the proposed action would be minor but beneficial to the local socioeconomic conditions. Construction labor and materials would be purchased from the local community, increasing local revenue.

Under the no action alternative, there would be no change in socioeconomic conditions from the current status.

#### **4.14 Environmental Justice**

Environmental justice analyses for NEPA documents attempt to determine whether a proposed action disproportionately impacts minority and poor populations. Since the proposed action would not result in any significant impacts to the surrounding community, no such analysis was conducted.

#### **4.15 Cumulative Impacts**

There are no significant long-term adverse impacts expected from the proposed action. Through the reconfiguration of the Roy Gate area, explosive-laden vehicles would be inspected in a more remote location than they are currently. The risk of an accidental scenario involving vehicles and/or pedestrians would be reduced. Negligible emissions from construction activities would occur, but are expected to contribute a very small percentage of the total air emissions at Hill AFB. It is anticipated that there would be no adverse impacts to jurisdictional wetlands.

Cumulative impacts of the no action alternative include increased concerns regarding the safety and security of transporting explosive-laden vehicles on-Base. Also, the risk for vehicle and/or vehicle/pedestrian accidents will not be reduced, and may increase, under the no action alternative. As a result of future conditions, the Museum may be limited in its expansion opportunities.

#### **4.16 Summary of Impacts**

A summary of the impacts described in this section is provided in Table 4-1. It is not anticipated that the proposed action would have significant adverse environmental impacts, however, the no action alternative

would contribute to safety and security issues regarding explosive-laden vehicles and pedestrian/vehicle interaction.

**Table 4-1  
Anticipated Environmental Consequences from the ROY GATE RELOCATION**

<b>Environmental Issues</b>	<b>Proposed Action Alternative Location</b>	<b>No-Action Alternative</b>
Surface Water	Short-term additional sediment runoff during construction.	No impact.
Groundwater	No impact.	No impact.
Geology and Soils	Short-term surficial soil disturbance related to construction activities.	No impact.
Vegetation	Removal of approximately 20 trees. These would be replaced in the vicinity of the proposed action.	No impact.
Wetlands	0.08 acre will be impacted. Coordination with COE and submittal for NWP #39 required.	No impact.
Wildlife	No impact.	No impact.
Air Quality	No significant adverse impact. Negligible exhaust emissions from construction activities. Dust control measures would be implemented to control fugitive dust.	No impact.
Cultural Resources	No significant adverse impact.	No impact.
Land Use	No adverse impact. Land would still serve as a transportation corridor and an outdoor Museum exhibit area.	No impact.
Noise	No significant adverse impact. A slight increase in noise during construction may occur, but this would be short-term and limited to daylight hours.	No impact.
Health and Safety	Reduced potential for traffic/pedestrian and traffic accidents.	Potential for traffic/pedestrian and traffic accidents may increase.
Transportation	Improved transportation facilities.	No impact.
Socioeconomics	No impact.	No impact.
Environmental Justice	No impact.	No impact.

## **Section 5**

### **LIST OF PREPARERS**

Kay Winn, NEPA Program Manager, Hill AFB, Utah.

Alex Hildebrand, Environmental Engineer, URS, Salt Lake City, Utah.

Mary DeLoretto, Senior Engineer, URS, Salt Lake City, Utah.

Chris Ditton, GIS Specialist, URS, Salt Lake City, Utah.

## **Section 6**

### **LIST OF PERSONS CONTACTED**

*Marcus Blood*, Natural Resource Manager, Hill AFB, 801-777-4618.

*Jaynie Hirschi*, Archaeologist, Hill AFB, 801-775-6920.

*Sanford Moss*, GIS Specialist, Hill AFB, 801-775-6972

*Rick Oliver*, Hill Aerospace Museum, Hill AFB, 801-777-6818

*Chris Porter*, Professional Engineer, Hill AFB, 801-775-4133

*George Stratman*, Explosives Safety Manager, Hill AFB, 801-777-1425.

*Albert “Bert” Whipple*, Hill Master Planner, Hill AFB, 801-777-2145

## Section 7

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## **Appendix A**

### **Photographs**



**Photograph 1 showing mowed/developed land of the northern portion of the Proposed Action. The tall orange stakes indicate the centerline of the proposed roadway.**



**Photograph 2 showing undeveloped land of the southern portion of the Proposed Action. The tall orange stakes indicate the centerline of the proposed roadway.**



**Photograph 3 showing Magazine Road and the current Incoming Munitions Inspection Station.**



**Photograph 4 showing the monument that will have to be relocated in order to accommodate the proposed roadway.**

**Appendix B**  
**Conformity Analysis**

Total Estimated Construction Emissions for the Roy Gate Relocation, Hill AFB, Utah

<b>TOTAL EMISSIONS</b>					
<b>Proposed Roy Gate Relocation</b>					
Emissions tons/year					
Source Types	PM10	SOx	NOx	VOC	CO
Construction Equipment*	0.36	0.72	6.99	0.56	2.90
Construction Generators*	0.17	0.10	5.76	0.14	1.32
<b>TOTAL</b>	<b>0.53</b>	<b>0.82</b>	<b>12.75</b>	<b>0.71</b>	<b>4.22</b>

\* Temporary emissions, during construction phase only.

Emission Estimate for New Roadway and Inspection Lot for Roy Gate Relocation:  
Construction Equipment

**Backhoe**

		E.F.		Emissions		
	hr	pollutant	lb/hr	pollutant	lbs	ton/yr
1 Backhoe for 600 hrs	600	TSP	0.058	TSP	34.80	0.02
		PM10	0.0464	PM10	27.84	0.01
		SOx	0.076	SOx	45.60	0.02
		NOx	0.827	NOx	496.20	0.25
		CO	0.201	CO	120.60	0.06
		VOC (+ald)	0.107	VOC	64.20	0.03
		aldehydes	0.009	aldehydes	5.40	0.00

**Roller**

		E.F.		Emissions		
	hr	pollutant	lb/hr	pollutant	lbs	ton/yr
2 Rollers for 1200 hrs	1200	TSP	0.05	TSP	60.00	0.03
		PM10	0.04	PM10	48.00	0.02
		SOx	0.067	SOx	80.40	0.04
		NOx	0.862	NOx	1034.40	0.52
		CO	0.304	CO	364.80	0.18
		VOC (+ald)	0.083	VOC	99.60	0.05
		aldehydes	0.016	aldehydes	19.20	0.01

**Dump Trucks**

		E.F.		Emissions		
	hr	pollutant	lb/hr	pollutant	lbs	ton/yr
2 Dump Trucks for 1000 hrs	2600	TSP	0.256	TSP	665.60	0.33
2 Cement Trucks for 600 hrs		PM10	0.2048	PM10	532.48	0.27
2 Asphalt Trucks for 1000 hrs		SOx	0.454	SOx	1180.40	0.59
		NOx	4.166	NOx	10831.60	5.42
		CO	1.794	CO	4664.40	2.33
		VOC (+ald)	0.304	VOC	790.40	0.40
		aldehydes	0.112	aldehydes	291.20	0.15

**Miscellaneous**

		E.F.		Emissions		
	hr	pollutant	lb/hr	pollutant	lbs	ton/yr
1 Grader for 600 hrs	960	TSP	0.139	TSP	133.44	0.07
1 Post Digger for 20 hrs		PM10	0.1112	PM10	106.75	0.05
1 Flat Bed Trucks for 40 hrs		SOx	0.143	SOx	137.28	0.07
1 Paver for 300 hrs		NOx	1.691	NOx	1623.36	0.81
		CO	0.675	CO	648.00	0.32
		VOC (+ald)	0.183	VOC	175.68	0.09
		aldehydes	0.031	aldehydes	29.76	0.01

TOTAL Emissions		
pollutant	lbs	ton/yr
TSP	893.84	0.45
PM10	715.07	0.36
SOx	1443.68	0.72
NOx	13985.56	6.99
CO	5797.80	2.90
VOC	1129.88	0.56
aldehydes	345.56	0.17

AP-42 Volume 2, Chapter II-7, tracktype loader, roller, off-highway truck, and miscellaneous

Roy Gate Relocation: Construction Generator

Source	hp	hrs	Emission Factors		Emissions - Generator1			
			lb/hp-hr			lbs	ton/yr	
Generator	600	800	TSP	7.00E-04	TSP	336.00	TSP	0.17
			PM10	7.00E-04	PM10	336.00	PM10	0.17
			SOx	4.00E-04	SO2	192.00	SO2	0.10
			NOx	0.024	NOx	11520.00	NOx	5.76
			VOC	6.00E-04	VOC	288.00	VOC	0.14
			CO	5.50E-03	CO	2640.00	CO	1.32

2 Generators @ 300 hours per generator  
 AP-42 3.4, Table 3.4-1 (<300 hp diesel engines)  
 Assume % sulfur = 0.05  
 $SO_x = 8.09 \times 10^{-3} S = 0.0004$   
 $VOC = 7.05 \times 10^{-4} \times 0.91 = \text{nonmethane}$