
Environmental Assessment for the Replacement of a Vehicle Wash Rack Travis Air Force Base, California

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**FINDING OF NO SIGNIFICANT IMPACT (FONSI)
ENVIRONMENTAL ASSESSMENT FOR THE REPLACEMENT OF A
VEHICLE WASH RACK**

TRAVIS AIR FORCE BASE, CALIFORNIA

Introduction

This Finding of No Significant Impact (FONSI) was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969; Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA, 40 Code of Federal Regulations (CFR) Parts 1500-1508; and The Environmental Impact Analysis Process, 32 CFR 989. The decision in this FONSI is based on information contained in the *Environmental Assessment (EA) for the Replacement of a Vehicle Wash Rack, Travis Air Force Base (AFB or Base)*. The purposes of the EA are to determine the extent of environmental impacts that might result from proposed improvements at Travis AFB and evaluate whether these impacts, if any, would be significant.

The purpose of the Purposed Action is to replace the existing inadequate, manual vehicle wash rack (and associated oil/water separator [O/WS]) in the Logistics Readiness Squadron (LRS) yard with an automated drive-through vehicle washing facility (drive-through) that is operationally superior and environmentally compliant. The Proposed Action would meet the Base's need to provide an environmentally compliant area to wash and maintain the exteriors of approximately 1,000 Base fleet and LRS vehicles. LRS and Base personnel currently wash the vehicles manually at the existing wash rack. This practice is inefficient. The existing wash rack is used during limited hours because it is not lighted, and it is too small to permit washing of large Base fleet and LRS vehicles. Furthermore, the current O/WS associated with the wash rack has been found to be inadequate.

Description of Proposed Action and Alternatives

The No Action Alternative and the Proposed Action are analyzed in the EA. The No Action Alternative was carried forward for analysis in accordance with NEPA 40 CFR §1502.14(d). To be considered a reasonable alternative, the chosen alternative should meet state and U.S. Air Force (Air Force) environmental requirements for the use of cleaning products and washing systems; comply with Air Force and Department of Defense planning and design manuals, design standards, and safety requirements for vehicle maintenance operations; meet Anti-Terrorism/Force Protection requirements; provide an enclosure to block wind; provide lighting for use at night; and be cost effective.

Under the No Action Alternative, Trans and Base personnel would continue to wash vehicles manually at the existing wash rack using cold water. Cleaning supplies would be purchased using the Government Purchase Card (GPC), which could result in the purchase and use of unauthorized products. Use of the existing uncovered, unlit facility would not be feasible on windy days or at night. Use of the current wash rack would result in inadequate cleaning of vehicle exteriors, leading to accelerated deterioration and impaired vehicle appearance. Vehicles would need more frequent repainting to repair exterior damage caused by inadequate maintenance, resulting in increased Base operational costs.

Under the Proposed Action, the existing wash rack would be demolished and replaced with a high-pressure, hot-water drive-through at the same location. The Proposed Action would provide an environmentally complaint area to clean Base fleet and LRS vehicles. The drive-through would have two fully automated bays, one for smaller vehicles and another for buses and trucks. Ancillary equipment, like the high-pressure pump and hot water heater, would be

installed between the two bays to serve both. The existing O/WS would be replaced with a closed-loop treatment system and an upgraded O/WS capable of meeting peak wastewater load volumes. The new system would have appropriate lighting and be partially enclosed.

Other alternatives considered included locating the wash rack at a different location within the LRS yard, locating the wash rack outside the LRS yard, and combining the LRS wash rack with other existing or planned wash racks. These alternatives were eliminated from detailed analysis because they did not meet the selection criteria. The Proposed Action is the only alternative that meets the selection criteria, in addition to having no significant adverse effects on the natural or human environment.

Decision

After reviewing the EA, the Air Force has decided to proceed with demolition of the existing wash rack and construction of the drive-through. The potential impacts to the human and natural environment were evaluated relative to the No Action Alternative. For each environmental resource or issue, anticipated direct and indirect effects were assessed, considering both short-term and long-term project effects. Analysis shows that no significant impacts would be expected from implementation of the Proposed Action. During demolition, construction, and operation, the Proposed Action would result in less than significant impacts or no effects to air quality, noise, hazardous materials, hazardous waste, stored fuels, water resources, biological resources, land use, cultural resources, transportation systems, airspace/airfield operations, safety and occupational health, environmental management, and environmental justice. The Proposed Action would provide socioeconomic benefits by generating construction jobs.

Overall, the analysis for this EA indicates that replacement of the vehicle wash rack, as described under the Proposed Action, would not result in or contribute to significant negative cumulative or indirect impacts to the resources in the region.

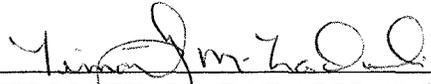
Conclusion

In accordance with the CEQ regulations implementing NEPA and the Air Force Environmental Impact Analysis Process, the Air Force concludes that the Proposed Action will have no significant impact on the quality of the human environment and that preparation of an environmental impact statement is not warranted.

A copy of the EA was made available to the public at the Fairfield-Suisun Community Library, the Vacaville Public Library, and the Mitchell Memorial Library at Travis AFB from 3-17 Jun 05. No comments were received from the public.

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 DATE: 13 Jul 05
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Executive Summary

Introduction

The U.S. Air Force (Air Force) Air Mobility Command proposes to replace the existing manual vehicle wash rack (and associated oil/water separator [O/WS]) in the Transportation Squadron (Trans) yard with an automated drive-through vehicle washing facility (drive-through). The purpose of this Environmental Assessment (EA) is to determine whether the Proposed Action would have a significant adverse effect on the quality of the environment. In accordance with Air Force Regulations (Title 32 of the Code of Federal Regulations [CFR], Part 989, Environmental Impact Analysis Process), an EA is the appropriate documentation required. A Categorical Exclusion is not applicable. In addition, an Environmental Impact Statement is not required because impacts potentially resulting from the Proposed Action would be less than significant.

Purpose of and Need for the Action

The purpose of the Proposed Action is to replace the existing inadequate wash rack with a newly constructed drive-through that is operationally adequate and environmentally compliant. Implementation of the Proposed Action would meet the Base's need to provide an environmentally compliant area to wash and maintain the exterior of 400 to 500 Base fleet and Trans vehicles. Currently, Trans and Base personnel manually wash the vehicles at the existing wash rack. This practice is inefficient because the existing wash rack cannot be used at night, is too small to wash large vehicles, and does not provide cover from wind and storm events. Time-consuming, manual cleaning of vehicles decreases productive time of personnel in accomplishing the Air Force assigned mission. Vehicles are occasionally taken offbase for cleaning in commercial wash racks, which increases maintenance costs and further diminishes the Airmen's time spent accomplishing the mission. Additionally, an internal Air Force assessment identified the current facility design as deficient because it allows stormwater infiltration into the sanitary sewer system during storm events.

Description of Proposed Alternatives

Reasonable alternatives for washing Base fleet and Trans vehicles and equipment at Travis AFB should meet or exceed environmental requirements for the use of cleaning products and washing systems, including operating a covered O/WS within design capacity limits, comply with planning and design manuals, design standards, and safety requirements for vehicle maintenance operations, provide an enclosure to block wind during windy days, provide internal lighting for nighttime use, and be cost effective. The No Action Alternative is carried forward for consideration in accordance with 32 CFR Part 989.8(d).

Other alternatives that were considered included locating the wash rack at a different location in the Trans yard, locating the wash rack outside the Trans yard, and combining the

Trans wash rack with other existing or planned wash racks. These alternatives were eliminated from detailed analysis because they did not meet all the selection criteria.

Alternative 1 – No Action Alternative

Under the No Action Alternative, vehicles would continue to be washed manually at the existing wash rack. Washing activities include the application of detergent, manual scrubbing of the vehicle, rinsing, and either air- or towel-drying. Hoses used to wet and rinse vehicles supply only cold water, which is less effective in removal of detergent and oily grime than warm or hot water. Cleaning supplies are routinely purchased using International Merchant Purchase Authorization Card, which could result in the inadvertent purchase and use of environmentally inferior or unauthorized products. Use of the current, uncovered facility is not feasible on windy days and cleaning operations are conducted only during daytime hours because the facility lacks adequate lighting. Use of the current wash rack results in infrequent and inadequate cleaning of vehicle exteriors, leading to accelerated vehicle deterioration and impaired appearance.

The O/WS associated with the wash rack works effectively up to a maximum flow of 20 gallons per minute. Because the wash rack is not covered, stormwater drains directly into the O/WS during storm events and overloads the treatment system. Furthermore, the O/WS discharge drains into a piping system where corrosion is suspected, which could allow effluent to infiltrate the soil and groundwater surrounding the piping system.

Alternative 2 – Proposed Action

The Air Force proposes to demolish the existing wash rack and construct an automated, enclosed, well-lit drive-through. The wash rack would be replaced in the existing location, but would exceed the current footprint to allow the drive-through to be large enough to accommodate large vehicles and full-size buses. The new facility would be a partially enclosed, environmentally complaint, high-pressure, hot-water vehicle cleaning system for the 400 to 500 vehicles comprising the Base and Trans fleets. A new gas line would be installed to connect the new facility to the existing gas-distribution network. The drive-through would have two fully automated bays: one for small-to medium-size vehicles and another for buses and trucks. Ancillary equipment, like the high-pressure pump, hot water heater, and process controls would be installed between the two bays to serve both. The new system would also have appropriate lighting.

The drive-through would be equipped with a closed-loop treatment system for water treatment and conservation. The existing O/WS would be replaced with an upgraded O/WS compatible with the new facility and capable of meeting peak wastewater load volumes. The existing, potentially corroded ancillary piping system would be replaced, if necessary, after inspection and during construction.

Operation and maintenance of the drive-through could be accomplished with the same number of personnel as is currently assigned to the Trans yard.

Environmental Consequences

The potential impacts to the human and natural environments were evaluated by comparing the Proposed Action to the No Action Alternative. The subsection for each environmental resource or issue assesses the anticipated direct and indirect impacts, considering both short- and long-term effects.

Air Quality

Alternative 1

Under the No Action Alternative, construction would not occur and air pollutant emissions associated with construction would not be generated. Emissions from operations, including travel to the site, would not change from current conditions.

Alternative 2

The Proposed Action would cause temporary, short-term adverse impacts to air quality as a result of construction emissions. Construction-related impacts are expected to be local and limited to the duration of the construction activities. Potential impacts are expected to be less than significant.

Long-term adverse impacts would include the operation emissions from the new hot water boiler for the drive-through. The increase in mobile emissions would be negligible because the Proposed Action would not increase the trips or vehicle miles traveled to Travis AFB during its operation. Operational impacts are expected to be less than significant.

Noise

Alternative 1

The No Action Alternative would not result in construction activities. Therefore, no construction noise would occur. Current operational noise levels would continue.

Alternative 2

The Proposed Action would generate noise during demolition and construction. Noise associated with construction activities would be temporary, occur during daytime hours, and vary in levels, depending on the sources in use and types of activities. Noise associated with flightline activities at the Proposed Action site has a community noise equivalent level of approximately 70 to 75 decibels (Williams, 2005, pers. comm.). Because construction noise would not be substantially higher than background levels, there would be no significant construction noise impacts to the adjacent buildings.

Operational noise levels are expected to increase slightly from existing levels. Noise levels generated by the drive through could be as high as 89 decibels at a distance of 20 feet. The noise levels generated by the wash rack are compatible with the land use designation of the Trans yard. Noise increases would be limited to the area surrounding the wash rack and would primarily occur during daylight hours.

Noise levels are expected to be at or below background levels by the time they reach any offsite receptors, and there are no sensitive receptors within 1,000 feet of the site. The

operators of the drive-through would follow applicable regulations, including Occupational Safety and Health Act regulations for acceptable noise exposure. The increase in noise during operation of the new wash rack is expected to be less than significant.

The increase in noise from demolition, construction, and operation would be minor and temporary, and any increases are expected to be offset by the ambient background noise control measures that are currently in place at neighboring buildings.

Hazardous Materials, Wastes, Environmental Restoration Program Sites, and Stored Fuels

Alternative 1

Implementation of the No Action Alternative would not result in changes to current waste production, waste management practices, Environmental Restoration Program sites, or stored fuels.

Alternative 2

The operation and maintenance practices at the wash rack would not change if the Proposed Action were implemented. Hazardous material impacts would be less than significant because the amount of hazardous materials used would not increase and hazardous materials would be used in accordance with the Hazardous Materials Management Plan.

Lead-based paint (LBP) could have been used on the existing wash rack. An LBP survey would be conducted prior to removal of any paint from the existing facility to determine whether it is present. If LBP were present, an abatement plan would be prepared and implemented for its safe abatement, in accordance with applicable health and safety and environmental regulations. Conducting an LBP survey and implementing an abatement plan (if necessary) would reduce potential impacts from LBP at the Proposed Action site to less than significant levels.

The Proposed Action would not involve any new activities that would generate hazardous waste. The proposed drive-through would be equipped with an O/WS that would comply with the Air Force's *Environmental Compliance Policy for Oil/Water Separator Operations, Maintenance and Construction* (1994). The hazardous waste handling and management techniques that are currently in practice at the Base would be followed. Impacts from vehicle washing would not be greater than the impacts that are associated with current practices at the site. Therefore, impacts associated with the drive-through would be less than significant.

The demolition phase of the Proposed Action would generate solid waste. The majority of the waste would be recycled. The amount of solid waste generated from replacement of the vehicle wash rack would be less than significant compared to the amount currently generated by the Base.

The Proposed Action is located within the boundary of ERP Site SS016. Contaminated soil and groundwater have been documented at Site SS016 (Travis AFB, 2002). Contaminants are not known to occur in the soil or groundwater directly beneath the Proposed Action site (Radian International, 1998; CH2M HILL, 2003). Construction is expected to disturb soil to a

depth no greater than 6 feet and is not expected to reach groundwater. Prior to construction, the following measures would be implemented:

- Consult with the Base Remediation Program Manager prior to construction.
- Obtain a dig permit (60 AMW Form 55).
- Prepare a contingency plan outlining steps to be taken in case soil discoloration or hydrocarbon vapors were detected or groundwater were encountered during construction. The contingency plan would be reviewed by the Base Remediation Program Manager prior to construction.

If contaminated materials were encountered during construction, protective measures would be implemented based on direction from the Base Remediation Program Manager; therefore, potential impacts to human health and the environment from potential contamination would be less than significant.

The Proposed Action site is not located over stored fuel; therefore, impacts to stored fuel are not anticipated.

Water Resources, Floodplains, and Wastewater

The current vehicle wash rack site is not located within the 100-year floodplain (Travis AFB, 2002 and 2003; CH2M HILL, 2003). Neither alternative would use groundwater or release water in a way that could impact groundwater. No significant impacts to floodplains or groundwater are expected from either of the project alternatives.

Alternative 1

If the No Action Alternative were selected, no changes to the stormwater drainage system or wastewater generation would occur.

Alternative 2

The Proposed Action site is connected to the stormwater drainage system through an underground pipe that conveys stormwater to Union Creek. Construction could potentially produce short-term impacts to the stormwater drainage system from erosion during earth-moving activities. The project would comply with applicable restrictions set forth in the stormwater permit, the stormwater pollution prevention plan, and the dig permit. Best Management Practices would be implemented in accordance with these permits to prevent erosion. Compliance with the relevant permits and implementation of Best Management Practices would reduce potential impacts from construction activities or stormwater discharges to less than significant levels.

Implementing the Proposed Action would not increase the amount of sewage entering the sanitary sewer system or change conveyance patterns. Water consumption would be reduced using a closed-loop treatment system. The closed-loop treatment system would consist of a series of process equipment, followed by several filtration devices. The drive-through would also be equipped with an O/WS, which would convey treated wastewater to the sanitary sewer system. The amount of wastewater generated would be less than significant compared to basewide sewer operations.

Biological Resources – Federal- and State-listed Threatened or Endangered Species

Alternative 1

No biological resources are present at or adjacent to the existing wash rack. Therefore, no impacts to biological resources would result from implementation of the No Action Alternative.

Alternative 2

The Alternative 2 site is currently a paved wash rack. There are no biological resources at or adjacent to the existing wash rack. Therefore, impacts to biological resources would not occur.

Socioeconomic Resources

Alternative 1

Selection of the No Action Alternative would not result in changes to the socioeconomic resources at the Base or in Solano County.

Alternative 2

Implementation of Alternative 2 would result in a temporary, beneficial impact to socioeconomic resources because it would require a temporary increase of approximately 30 civilian contract employees (construction workers) at the Base. Compared to the No Action Alternative, the Proposed Action would not result in long-term changes to socioeconomic conditions or onbase or regional populations.

Cultural Resources

Alternative 1

No cultural resources have been identified at or near the wash rack. Therefore, no impacts to cultural resources would occur under the No Action Alternative.

Alternative 2

There are no known archeological sites, historic buildings, or other culturally sensitive areas at or adjacent to the Proposed Action site; therefore, there would be no effect on this resource from the Proposed Action. Prior to construction, a dig permit (60 AMW Form 55) would be acquired and a contingency plan prepared. If an unexpected cultural resource were encountered, adherence to the dig permit and implementation of the contingency plan would reduce impacts to less than significant levels.

Land Use

Alternative 1

Under the No Action Alternative there would be no change to the existing land use.

Alternative 2

According to the *Travis Air Force Base General Plan* land use maps, the existing and future land use designation for the Proposed Action site is industrial (Travis AFB, 2002). The Proposed Action is compatible with the current and future site land use designations. There are no land use restrictions at the site. No impact to land use is anticipated from the Proposed Action.

Transportation System

Alternative 1

Under the No Action Alternative, current traffic levels and patterns would be maintained.

Alternative 2

The Alternative 2 site lies in the central portion of the Base, near the airfield. The Proposed Action would add vehicle traffic to Travis AFB only during demolition and construction activities. Potential traffic impacts resulting from the proposed construction and demolition would be temporary and minor in comparison to overall Base traffic. Impacts to the transportation system from the Proposed Action would be less than significant.

Airspace/Airfield Operations

Alternative 1

No change in airspace or airfield operations would result from the No Action Alternative.

Alternative 2

The drive-through would be located outside airspace and airfield operations areas. Therefore, construction of the Proposed Action would not result in impacts to airspace or airfield operations.

Safety and Occupational Health

Alternative 1

Implementing the No Action Alternative would not change health or safety conditions.

Alternative 2

Implementing the Proposed Action would require demolition of the current facilities and construction of new facilities, involving military and civilian personnel. In accordance with the Occupational Safety and Health Act, workers would be provided with appropriate personal protective equipment. A health and safety plan for construction would be prepared. If LBP were discovered, an approved abatement plan would be adopted that would detail the precautions necessary to protect worker health and safety. Construction areas would be secured as necessary to prevent unauthorized personnel from entering the work sites or excavations. The potential for adverse impacts to safety and occupational health are expected to be minor and limited to the duration of construction.

No impacts to public health are anticipated from operation of the drive-through.

Environmental Management (Including Geology, Soils, and Pollution Prevention)

Alternative 1

There would be no change to geology, soils, or pollution prevention if the No Action Alternative were implemented.

Alternative 2

No important geological or soil resources are present in the area of the Proposed Action. Therefore, potential impacts to geology or soils associated with the Proposed Action would be less than significant.

Generation and management of waste during demolition and construction are expected to meet Travis AFB pollution prevention goals. Waste production during operation of the drive-through would be approximately equal to the current levels; therefore, there would be minimal change as a result of implementing the Proposed Action, compared to current conditions.

Environmental Justice and Protection of Children

Alternative 1

Implementation of the No Action Alternative would not affect minority or low-income populations or children.

Alternative 2

Implementation of the Proposed Action would not result in impacts to minority or low-income populations or the health or safety of children.

Indirect and Cumulative Impacts

Alternative 1, the No Action Alternative, would have no potential for indirect or cumulative impacts.

Implementing the Proposed Action is not expected to result in significant indirect impacts to environmental or socioeconomic resources. The Proposed Action would not result in significant growth-inducing effects, induced changes in population, or related effects.

Projects considered for cumulative impact in the EA are those that are ongoing or planned to begin within the next 3 years at Travis AFB. The potential for cumulative impacts to air quality would come from multiple construction projects occurring simultaneously. The Proposed Action would conform to the State Implementation Plan and not be regionally significant. Provided that the planned projects are not constructed simultaneously, the State Implementation Plan measures for each project would be sufficient to prevent significant cumulative impacts from construction activities.

Earth-moving activities associated with multiple construction projects occurring simultaneously could impact water resources by decreasing the quality of surface water runoff during storm events. Impacts from multiple actions would be addressed and reduced to less than significant levels by adhering to the basewide permits and programs that are currently in place.

The Proposed Action would not put further strain on the stormwater or sanitary sewer systems; therefore, there would be no cumulative impacts to those systems.

Unavoidable Adverse Impacts

No significant unavoidable adverse impacts are expected from demolition, construction, or drive-through operation under the Proposed Action.

Relationship between Short-term Uses and Enhancement of Long-term Productivity

The Proposed Action would meet the Base's need to provide an environmentally compliant area to wash and maintain the exteriors of Base fleet and Trans vehicles. Currently, Trans personnel manually wash the vehicles at the existing wash rack. This practice is inefficient. Furthermore, the current O/WS associated with the wash rack was found to be inadequate. The Proposed Action would enhance long-term productivity at Travis AFB by resolving the deficiencies associated with the existing wash rack.

Irreversible and Irretrievable Commitment of Resources

Resources expected to be affected during long-term use of the drive-through include additional electricity for lighting and natural gas for heating.

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Acronyms and Abbreviations

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
Air Force	U.S. Air Force
AFB	Air Force Base
AFI	Air Force Instruction
AST	aboveground storage tank
BAAQMD	Bay Area Air Quality Management District
Base	Travis Air Force Base
Basin	San Francisco Bay Area Air Basin
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CDFG	California Department of Fish and Game
CEQ	President's Council on Environmental Quality
CES/CEV	Civil Engineering Squadron Environmental Flight
CFR	Code of Federal Regulations
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CWA	Clean Water Act
dB	decibel(s)
drive-through	drive-through vehicle washing facility
EA	Environmental Assessment
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ERP	Environmental Restoration Program
ft ²	square feet
LUC	land use control
NAAQS	National Ambient Air Quality Standards

NEPA	National Environmental Policy Act
NO _x	nitrogen oxide
O/WS	oil/water separator
PM _{2.5}	particulate matter less than 2.5 microns
PM ₁₀	particulate matter less than 10 microns
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
SIP	State Implementation Plan
SO ₂	sulfur dioxide
tpy	tons per year
Trans	Transportation Squadron
Travis AFB General Plan	Travis Air Force Base General Plan
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
UST	underground storage tank
VOC	volatile organic compound

Purpose of and Need for the Proposed Action

1.1 Introduction

The U.S. Air Force (Air Force) Air Mobility Command at Travis Air Force Base (AFB or Base) in Fairfield, California, proposes to replace the existing manual vehicle wash rack (known as Building 140) and the associated oil/water separator (O/WS) in the Transportation Squadron (Trans) yard with an automated drive-through vehicle washing facility (drive-through). The location of Travis AFB is shown on Figure 1-1 (figures are located at the end of each section). The proposed drive-through would be constructed at the same location as the existing wash rack, and would provide an environmentally compliant area to clean the exterior surfaces of Base fleet and Trans vehicles. The general location of the Proposed Action is shown on Figure 1-2.

Travis AFB, with the support of Air Mobility Command and the Air Force Center for Environmental Excellence, has prepared this EA in accordance with National Environmental Policy Act (NEPA) implementing regulations (40 Code of Federal Regulations [CFR] 1500 through 1508), Air Force Regulation 32 CFR 989, and Department of Defense directives. This EA has been prepared to determine whether the Proposed Action would have a significant adverse effect on the quality of the environment.

1.2 Need for the Action

Implementation of the Proposed Action would meet the Base's need to provide an environmentally compliant area to wash and maintain the exterior of 400 to 500 Base fleet and Trans vehicles. Currently, Trans personnel manually wash the vehicles at the existing wash rack. This practice is inefficient. Additionally, an internal Air Force assessment identified the current facility design as deficient because it allows stormwater infiltration into the sanitary sewer system during storm events. The following deficiencies are intended to be resolved by the Proposed Action:

- The existing wash rack is used during limited hours because it is not lighted for nighttime use.
- The existing washing system is too small to permit washing of the large Base fleet and Trans vehicles. Infrequent or inadequate cleaning and maintenance of the vehicles' exteriors will lead to accelerated deterioration and impaired appearance. Inadequate maintenance will also result in an increase in both the frequency and cost of repainting the vehicles. A clean vehicle appearance boosts the morale and pride of military and civilian personnel.
- The existing wash rack and O/WS have no cover, which results in stormwater entering the O/WS and ultimately infiltrating the sanitary sewer system during storm events. System overloads have been observed in the past. Furthermore, the O/WS is not sized to handle large quantities of stormwater runoff.

- The wastewater from the wash rack drains into a potentially corroded piping system, which creates the potential for wastewater to seep into the surrounding soil.
- The practice of purchasing cleaning supplies using the International Merchant Purchase Authorization Card and manually washing Base fleet and Trans vehicles is labor intensive and results in increased operational costs. Trans is operating at reduced personnel levels, and manual vehicle-washing is an additional demand on resources. Furthermore, inadequate cleaning products might be purchased on the International Merchant Purchase Authorization Card.
- Time-consuming manual cleaning of vehicles decreases productive time of personnel in accomplishing the Air Force assigned mission. Vehicles are occasionally taken offbase for cleaning in commercial wash racks, which increases maintenance costs and further diminishes the Airmen's time spent accomplishing the mission.

1.3 Objectives of the Action

The objectives of the Proposed Action are to replace the existing inadequate wash rack with a newly constructed drive-through that is operationally superior and environmentally compliant. The proposed drive-through would be used to clean the exteriors of the Base fleet and Trans vehicles. It would adhere to the following criteria:

- Be automated to increase the efficiency of vehicle washing and reduce water costs by reducing the volume of water used
- Have adequate lighting to allow nighttime use
- Be able to service large vehicles and full-size buses (dimensions as large as 45 feet long, 12 feet wide, and 15 feet high)
- Be a covered facility that complies with Air Force, state, and local regulations for wastewater, stormwater, and O/WSs
- Use environmentally compliant cleaning products and wash systems
- Be equipped with a credit card reader or similar device, to document frequency of use and types of vehicles

The proposed modern facility would provide an efficient and environmentally compliant vehicle cleaning system for Base fleet and Trans vehicles. It would have the capacity to clean the vehicles at the frequency required to meet maintenance objectives in a cost-effective way.

1.4 Location of Proposed Action

Travis AFB is located in the City of Fairfield, Solano County, and extends over approximately 5,128 acres (see Figure 1-1). The Base is located off Interstate 80, approximately midway between Sacramento and San Francisco and 7 miles northeast of central Fairfield.

The project site is located in the Trans yard at the center of the Base, adjacent to the south side of Hickam Avenue, with an entrance from Hangar Avenue (see Figure 1-2).

1.5 Scope of the Environmental Assessment

This EA documents and analyzes the potential environmental and socioeconomic effects associated with the Proposed Action, relative to the No Action condition.

1.6 Decision(s) that Must be Made

The Chairman of the Environmental Protection Committee at Travis AFB is responsible for selecting an alternative to improve air mobility operations. A decision to take No Action (Alternative 1) would result in Travis AFB maintaining the current vehicle wash rack and not replacing it with the drive-through. A decision to take action (Alternative 2) would result in Travis AFB proceeding with the proposed construction of the drive-through.

1.7 Applicable Regulatory Requirements and Required Coordination

This environmental analysis has been conducted in accordance with the President's Council on Environmental Quality (CEQ) regulations, 40 CFR Sections 1500 through 1508, as they implement the requirements of NEPA, 42 U.S. Code (USC) Sections 4321 et seq., and Air Force Regulation 32 CFR 989, Environmental Impact Analysis Process. Air Force Regulation 32 CFR 989 specifies the procedural requirements for the implementation of NEPA and preparation of an EA, and directs Air Force officials to consider environmental consequences as part of the planning and decisionmaking process.

Other environmental regulatory requirements relevant to the Proposed Action and alternative are also identified in this EA. Regulatory requirements under the following programs, among others, are assessed:

- Noise Control Act of 1972
- Clean Air Act (CAA)
- Clean Water Act (CWA)
- National Historic Preservation Act
- Archaeological Resources Protection Act
- Endangered Species Act of 1973
- Resource Conservation and Recovery Act (RCRA)
- Comprehensive Environmental Restoration, Compensation, and Liability Act
- Toxic Substances Control Act of 1970
- Occupational Safety and Health Act

Requirements also include compliance with Executive Order (EO) 11988 (Floodplain Management); EO 11990 (Protection of Wetlands); EO 12898 (Federal Actions to Address Environmental Justice in Minority and Low-Income Populations); and EO 13045 (Protection of Children from Environmental Health Risks and Safety Risks).

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Figure
1-1 Travis Air Force Base Location Map
8.5x11, B&W

Figure 1-1 Back

Figure
1-2 Location of Trans Wash Rack
(8 1/2 x 11, B&W)

Figure 1-2 Back

Description of the Alternatives, Including the Proposed Action

2.1 Introduction

This section presents the criteria for selecting the alternatives considered in this EA and describes the alternatives carried forward for detailed analysis.

2.2 Selection Criteria for Alternatives

Reasonable alternatives for washing Base fleet and Trans vehicles and equipment at Travis AFB should accomplish the following in a cost-effective manner and with minimal impact to human health and natural resources:

- Meet or exceed state and Air Force environmental requirements for the use of cleaning products and washing systems, including operating a covered O/WS within design capacity limits
- Comply with Air Force and Department of Defense planning and design manuals, design standards, and safety requirements for vehicle maintenance operations
- Meet Department of Defense Anti-Terrorism/Force Protection requirements
- Provide an enclosure to block wind during windy days, to increase the time the facility is available for use
- Provide internal lighting for nighttime use, to increase the time the facility is available for use
- Minimize the cost of the project (e.g., by making efficient use of existing utility infrastructure)

2.3 Alternatives Considered but Eliminated from Detailed Study

This EA analyzes the No Action Alternative and the Proposed Action. The following three alternatives were considered but eliminated from further consideration in this EA:

- Locating the wash rack at a different location in the Trans yard
- Locating the wash rack outside the Trans yard
- Combining the Trans wash rack with other existing or planned wash racks

An alternative location inside the Trans yard was considered and eliminated because it would not meet all selection criteria. The current location of the wash rack (Building 140)

and a potential alternative location in the Trans yard just south of Building 140 are shown on Figure 2-1. The current location is also the site of the Proposed Action (see Section 2.4.2). The Trans yard has two gates for access and egress, one to Broadway Street on the west side of the yard and another to Hangar Avenue on the south side of the yard. The center of activity in the Trans yard is from Building 140 south in the eastern portion of the yard and, therefore, only the Hangar Avenue gate is used. The Broadway Street gate remains locked and is not used. Use of the Hangar Avenue gate complies with the AT/FP requirement of maintaining a maximum line of sight along buildings and of access/egress locations. Constructing a wash rack south of Building 140 would require closure of the Hangar Avenue gate to accommodate the new, larger wash rack. Use of the Broadway Street gate would move the point of access/egress to a location with compromised line of sight because comparatively little activity occurs in the western portion of the Trans yard. Moving the point of access/egress to the Broadway Street gate would not comply with the line of sight AT/FP requirement, which would be inconsistent with the selection criterion of meeting AT/FP requirements. Therefore, the alternative of locating the wash rack south of Building 140 was eliminated from further consideration.

Alternative locations outside the Trans yard were also eliminated because they would not meet all selection criteria. Constructing a wash rack outside the Trans yard would require extending utility lines for water and wastewater to the new location. Because water and wastewater lines already exist in the current location, this would be a duplication of features and an inefficient use of government resources. Locating the new wash rack outside the Trans yard would not meet the selection criterion of minimizing project costs. Therefore, the alternative was eliminated.

Combining the proposed wash rack with other existing or planned wash racks would not be operationally feasible. The existing Trans wash rack is the only wash rack for government-owned vehicles at the Base. A commercial wash rack exists for privately owned vehicles, but government and commercial operations cannot be merged. Therefore, combining the functions is not feasible. Another option would be combining the proposed Trans wash rack with a wash rack that is planned in conjunction with the Global Reach Deployment Center and Ancillary Facilities (Center) (CH2M HILL, 2005). The mission of the Center is the rapid deployment of contingency response units, which have to meet stringent response deadlines. Granting permanent use of the Center wash rack to Trans could create schedule conflicts and put the Center's mission at risk. The alternative of combining the Trans wash rack with existing or planned wash racks was eliminated because combining the functions is operationally not feasible, in one case because commercial enterprises and government functions cannot be mingled and in the other case because permanent assignment of the Trans wash rack operation to the Center could interfere with the Center's mission.

2.4 Description of Proposed Alternatives

2.4.1 Alternative 1 – No Action

Under the No Action Alternative, construction of the automated drive-through would not occur, and the existing wash rack would continue to be used.

Under the No Action Alternative, vehicles would continue to be washed manually at the existing wash rack (see Figure 2-2), which has an area of approximately 3,200 square feet (ft²) (approximate dimensions are 45 feet by 71 feet) and was built in the 1970s. Washing activities include the application of detergent, manual scrubbing of the vehicle, rinsing, and either air- or towel-drying. Hoses used to wet and rinse vehicles supply only cold water, which is less effective in removal of detergent and oily grime than warm or hot water. Cleaning supplies are routinely purchased using International Merchant Purchase Authorization Card, which could potentially result in the inadvertent purchase and use of environmentally inferior or unauthorized products. Water use is not monitored, and users of the wash rack could potentially leave water running while cleaning (i.e., scrubbing) a vehicle. Use of the current, uncovered facility is not feasible on windy days because water coming from the hosing cannot be controlled. Moreover, cleaning operations are conducted only during daytime hours because the facility lacks adequate lighting.

Use of the current wash rack results in infrequent and inadequate cleaning of vehicle exteriors, leading to accelerated vehicle deterioration and impaired appearance. Operational costs are increased because vehicles need more frequent repainting to repair exterior damage caused by inadequate maintenance.

The O/WS associated with the wash rack has a total tank volume of 690 gallons and an oil holding tank with a capacity of 400 gallons (see Figure 2-3). The system works effectively up to a maximum flow of 20 gallons per minute. Wash-rack runoff currently drains across an asphalt pad into an O/WS. Because neither the pad nor the O/WS is covered, grit and silt that accumulate on the pad during extended periods between wash rack uses are washed into the O/WS along with the used washwater when the wash rack is used. This is a problem because it has been determined that the settling chamber is not removing sediment efficiently. In addition, stormwater drains directly into the O/WS during storm events. This overloads the treatment system, causing it to operate ineffectively. Furthermore, the O/WS discharge drains into a piping system where corrosion is suspected. O/WS effluent might be infiltrating the soil and groundwater surrounding the pipes.

2.4.2 Alternative 2 – Proposed Action: Replace Trans Wash Rack Facility

The Air Force proposes to construct an automated, enclosed drive-through to replace the existing wash rack and O/WS.

The current wash rack would be demolished. The concrete and metal recovered during demolition would be recycled, and nonrecyclable materials would be disposed of at appropriate facilities, in accordance with Air Force Instructions (AFI) and Base guidelines.

The wash rack would be replaced in the existing location, but would exceed the current footprint to allow the drive-through to be large enough to accommodate large and full-size buses. The new facility would be a partially enclosed, environmentally compliant, high-pressure, hot-water vehicle cleaning system for the 400 to 500 vehicles comprising the Base and Trans fleets. The new system would have appropriate lighting and the operational flexibility to service a range of vehicle types, including cars, trucks, and full-size buses. The facility would have two bays: one bay for small- to medium-size vehicles and a second bay for buses and trucks. Each bay would be fully automated. Ancillary equipment, like the

high-pressure pump, hot water heater, cleaning solution, and process controls, would be installed between the two bays to serve both.

Water would be heated by a gas-fueled water heater with an estimated gas consumption rate of 2,000 cubic feet per hour. A new gas line would be installed that would connect the new facility to the existing gas-distribution network (see Figure 2-1) via a buried gas line located approximately 300 feet west of the Proposed Action site, oriented north to south. Water consumption would be reduced using a closed-loop treatment system, which would consist of a series of processing equipment and several filtration devices.

The existing O/WS would be replaced with an upgraded O/WS compatible with the new facility and capable of meeting peak wastewater load volumes. The existing, potentially corroded ancillary piping system would be replaced if deemed necessary after inspection during construction.

The proposed drive-through would meet or exceed state and Air Force environmental requirements for the use of cleaning products and washing systems. It would also comply with Air Force planning and design manuals, design standards, and safety requirements for vehicle maintenance operations.

Implementation of the Proposed Action would begin during fiscal year 2007 and take approximately 1 year to complete. Demolition would occur during the first month of implementation. Operation and maintenance of the drive-through could be accomplished with the same number of personnel as currently assigned to the Trans yard.

2.5 Description of Past and Reasonably Foreseeable Future Actions Relevant to Cumulative Impacts

This EA identifies actions that have been conducted in the past, are ongoing or in the planning stages, and future actions that are related to the Proposed Action. Details of the actions that have the potential to interact with the Proposed Action are included in Section 4.15, Indirect and Cumulative Impacts.

2.6 Identification of Preferred Alternative

The Air Force's Preferred Alternative for this EA is the Proposed Action described in Section 2.4.2. This alternative best meets the selection criteria.

2.7 Comparison of the Environmental Impacts of Alternatives

Table 2-1 compares the environmental effects of the alternatives described above.

TABLE 2-1

Summary of Potential Environmental and Socioeconomic Consequences

Environmental Assessment for the Replacement of a Vehicle Wash Rack, Travis Air Force Base, California

Resource	Environmental and Socioeconomic Consequences ^a	
	Alternative 1 No Action	Alternative 2 Proposed Action
Air Quality	No effect	Less than significant (construction); less than significant (operation)
Noise	No effect	Less than significant (construction); less than significant (operation)
Hazardous Materials, Wastes, ERP Sites, and Stored Fuels		
Hazardous Materials	No effect	Less than significant (construction); no effect (operation)
Wastes	No effect	Less than significant (construction); no effect (operation)
ERP Sites	No effect	No effect
Stored Fuels	No effect	No effect
Water		
Surface Water	No effect	Less than significant (construction); no effect (operation)
Wastewater	No effect	Less than significant (construction); no effect (operation)
Biological	No effect	No effect
Socioeconomic Resources	No effect	Short-term, beneficial (construction); no effect (operation)
Cultural	No effect	No effect
Land Use	No effect	No effect
Transportation System	No effect	Less than significant (construction); no effect (operation)
Airspace/Airfield Operations	No effect	No effect
Safety and Occupational Health	No effect	Less than significant (construction); no effect (operation)
Environmental Management		
Geology and Soils	No effect	Less than significant (construction); no effect (operation)
Pollution Prevention	No effect	Less than significant (construction); no effect (operation)
Environmental Justice	No effect	No effect
Indirect and Cumulative Impacts	No effect	Less than significant (construction); no effect (operation)

^aUnder Alternative 1, construction would not take place and, therefore, there would be no effects from construction; impacts indicated are associated with operation. Unless otherwise noted, effects listed for Alternative 2 are applicable to both construction and operation. Effects are compared to the No Action Alternative.

Note: ERP = Environmental Restoration Program

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2-1 Existing and Alternative Wash Rack Locations Inside the Trans Yard
Figure
(8 1/2 x 11, B&W)

Figure 2-2 continued

Figure
2-2 Existing Trans Wash Rack
(8 1/2 x 11, B&W??)

Figure 2-2 continued

Figure
2-3 Existing Oil/Water Separator
(8 1/2 x 11, B&W??)

Affected Environment

3.1 Introduction

This section presents specific information about the environment at Travis AFB that could be adversely affected as a result of implementing the Proposed Action. Potential impacts resulting from the Proposed Action are described in detail in Section 4.0.

3.2 Air Quality

Travis AFB is located in central Solano County, which is at the eastern edge of the San Francisco Bay Area Air Basin (Basin). The Basin extends from Napa County in the north to Santa Clara County in the South. The Basin encompasses 5,340 square miles and 19 percent of California's population. The Basin is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD) pursuant to a mandate from the California Air Resources Board (CARB). Only the golf course at Travis AFB extends into a neighboring jurisdiction, the Yolo-Solano Air Pollution Control District.

The purpose of this section is to provide an overview of regional air quality. The information presented in this section includes a discussion of existing meteorological and topographical conditions, applicable federal and state regulations, regional air quality management programs, and the current air quality conditions.

3.2.1 Regional Climate

California has a Mediterranean climate, with wet winters and dry summers. Although Travis AFB is not located near the coast, it is located near the Carquinez Strait, a major break in the Coast Range that allows the ocean to moderate temperatures at Travis AFB. The Base usually experiences mild temperatures; the mean annual temperature is 60 degrees Fahrenheit. The lowest temperatures occur in January, with a mean of 46 degrees Fahrenheit. The highest temperatures occur in July and August, with a mean of 72 degrees Fahrenheit. Monthly mean relative humidity typically ranges from a low of 50 percent in June to a high of 77 percent in January. The mean annual relative humidity is 60.5 percent. Precipitation is approximately 17 inches per year.

During the late summer and early fall months, Travis AFB is subject to marine air flowing from high pressure cells offshore toward low pressure in the Central Valley. Winds tend to flow from the west, range from 15 to 20 miles per hour, and are typically strongest in the afternoon. The Base occasionally experiences easterly winds generated in the Central Valley. Winds from the Central Valley tend to have higher pollutant loads.

3.2.2 Current Air Quality Conditions

The Basin has been assessed for compliance with California and National Ambient Air Quality Standards (CAAQS and NAAQS, respectively). Three air quality designations can be given to an area for a particular pollutant, as follows:

- **Nonattainment:** This designation applies when air quality standards have not been consistently achieved.
- **Attainment:** This designation applies when air quality standards have been achieved.
- **Unclassified:** This designation applies when there is not enough monitoring data to determine whether the area is in nonattainment or attainment.

According to CARB, the Basin is designated nonattainment for state standards for ozone, particulate matter less than 10 microns (PM₁₀, or fugitive dust), and particulate matter less than 2.5 microns (PM_{2.5}). Relevant ambient air quality standards are listed in Table 3-1, along with their respective attainment status. The Basin is designated attainment for nitrogen oxide (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), sulfate particulates, and lead particulates by state standards. By federal standards, the Basin is also designated nonattainment for 1-hour and 8-hour ozone. All other criteria pollutants are designated attainment or unclassified. Table 3-2 lists maximum pollutant levels and days the CAAQS were exceeded from 1996 and 2002.

TABLE 3-1

Bay Area Air Quality Management District Attainment Status as of November 2004

Environmental Assessment for the Replacement of a Vehicle Wash Rack, Travis Air Force Base, California

Pollutant	Averaging Time	California		Federal	
		Standard	Attainment Status	Standard	Attainment Status
Ozone	8 Hours	—		0.08 ppm	N (Marginal)
	1 Hour	0.09 ppm	N	0.12 ppm	N (Other)
CO	8 Hours	9.0 ppm	A	9.0 ppm	A (M)
	1 Hour	20.0 ppm	A	35.0 ppm	A (M)
Nitrogen Dioxide	Annual	—	—	0.053 ppm	A
	1 Hour	0.25 ppm	A	—	—
SO ₂	Annual	—	—	0.03 ppm	A
	24 Hours	0.04 ppm	A	0.14 ppm	A
	1 Hour	0.25 ppm	A	—	—
PM ₁₀	Annual Geometric Mean	20 µg/m ³	N	50 µg/m ³	A ^a
	24 Hours	50 µg/m ³	N	150 µg/m ³	U
PM _{2.5}	Annual Arithmetic Mean	12 µg/m ³	N	15 µg/m ³	U
	24 Hours	—	—	65 µg/m ³	U

^aAnnual arithmetic mean

Notes:

N = Nonattainment

A = Attainment

U = Unclassified

ppm = parts per million

µg/m³ = micrograms per cubic meter

— = not applicable

Travis AFB is within the jurisdiction of the BAAQMD. Permits have been issued for approximately 130 stationary sources (e.g., incinerator exhaust ports) and for more than 250 mobile sources (e.g., portable gasoline generators) (Travis AFB, 2002a). Approximately 110 sources are exempt. None of the air sources has been shown to negatively affect resources on- or offbase (Travis AFB, 2003a). Compliance with BAAQMD standards and practices is detailed in the *Travis Air Force Base General Plan* (Travis AFB General Plan) (Travis AFB, 2002a).

TABLE 3-2

San Francisco Bay Area Air Basin Exceedances of the State Ambient Air Quality Standards from 1996 through 2002
Environmental Assessment for the Replacement of a Vehicle Wash Rack , Travis Air Force Base, California

Year	Ozone ^a		CO ^b		PM ₁₀ ^c	
	Number of Exceedance Days	Maximum 1-hour Concentration (ppm)	Number of Exceedance Days	Maximum 1-hour Concentration (ppm)	Number of Exceedance Days	Maximum 24-hour Concentration (µg/m ³)
1996	34	0.138	0	8.8	18	76
1997	8	0.114	0	10.7	20	85
1998	29	0.147	0	8.7	25	100
1999	20	0.156	0	9.0	63	117
2000	12	0.152	0	9.8	42	80
2001	15	0.134	0	7.6	51	114
2002	16	0.160	0	7.7	30	84

^aThe sampling frequency of ozone is continuous (hourly). The CAAQS for ozone is 0.09 ppm.

^bThe sampling frequency of CO is continuous (hourly). The 1-hour CAAQS for CO is 20 ppm.

^cSampling of PM₁₀ is scheduled throughout the project area once every sixth a (24-hour sample). Therefore, each station has nominally 60 sampling days per year. All stations have the same schedule; that is, they all attempt to sample for PM₁₀ on the same days. The number of station-sampling days per county would depend on the number of PM₁₀ stations in the county. The 24-hour CAAQS for PM₁₀ is 50 µg/m³. Comparisons with the newly adopted annual PM₁₀ and PM_{2.5} standards have not been made because the standards are new.

Source: CARB, 2004

3.2.2.1 Ozone

Attainment of the NAAQS for ozone in the Basin has remained relatively uniform over the last decade. Exceedances are generally attributed to unique meteorological patterns, combined with increases in emissions during the summer months. Urban vehicular emissions, industrial emissions, and high ambient temperatures in the Basin contribute to summer ozone generation and subsequent air standard violations.

In Solano County, CAAQS have been exceeded each year from 1996 through 2002. Peak hourly average ozone concentrations ranged from 0.096 to 0.129 ppm during this time. In 2003, the peak 1-hour ozone concentration was 0.101 ppm, measured by the BAAQMD at their Tuolumne Street monitoring station in Vallejo, approximately 20 miles southwest of the Base. The air monitoring closest to the Base is the Chadbourne Road facility in Fairfield, located approximately 10 miles to the west, also operated by the BAAQMD. No exceedances of the ozone standard were recorded at the Chadbourne Road facility in 2003.

3.2.2.2 Fugitive Dust

Fugitive dust (PM₁₀) is generated within the project area by combustion sources and wind during dry conditions (CARB, 2001). PM₁₀ levels are elevated during the winter (due to stable conditions and low mixing heights) because of wood smoke, vehicle exhaust, and dry, windy conditions. In 2002, the maximum 24-hour PM₁₀ concentration (monitored since 2001) within Solano County was 84 µg/m³. Federal 24-hour PM₁₀ concentrations have been monitored in Solano County since 1994. The 24-hour PM₁₀ NAAQS have not been exceeded since monitoring began.

3.2.3 Indoor Air Quality

Beginning in 1998, basewide studies were conducted to identify sources of radon emissions. A total of 35 locations were screened. All radon measurements were below the criteria for determining whether a detailed assessment would be required (4 picocuries per liter). Based on these studies, no further evaluation is required (Travis AFB, 2002a).

3.3 Noise

The Air Force typically uses the Air Installation Compatible Use Zone guidelines to promote compatible land use development. Noise is one consideration to be addressed under Air Installation Compatible Use Zone and accordingly, Travis AFB has assessed noise levels in relation to the flightline. The descriptor of noise typically used in California is the Community Noise Equivalent Level (CNEL). The CNEL is the average sound energy level for a 24-hour day determined after the addition of a 5-decibel (dB) penalty to noise generated between 7:00 and 10:00 p.m and a 10-dB penalty to noise events occurring at night between 10:00 p.m. and 7:00 a.m. The CNEL is calculated using the sound energy generated by individual noise events, the number of events occurring during a 24-hour period, and the time of day at which the events occur.

Maximum CNELs in excess of 80 dB are produced during flight operations. These noise levels are intermittent and localized to the flightline. The majority of the Base experiences CNELs ranging from 60 to 75 dB. Some activities at the Base produce noise levels higher than the CNELs produced by flight operations. Noise levels near the Proposed Action site are approximately 70 to 75 dB (Williams, 2005, pers. comm.).

3.4 Hazardous Materials, Waste, Environmental Restoration Program Sites, and Stored Fuels

3.4.1 Hazardous Materials and Hazardous Waste

The activities conducted at Travis AFB that use the majority of hazardous materials include maintenance of aircraft, transportation equipment, and facilities. These activities contribute approximately 95 percent of the total volume of hazardous waste generated at the Base, including flammable solvents, contaminated fuels and lubricants, stripping chemicals, waste oils, waste paint, absorbent materials, chemicals stored beyond their expiration dates, and asbestos (Travis AFB, 2002a). Hazardous materials are ordered, stored, and used in accordance with the Base Hazardous Materials Management Plan.

The Base maintains and implements a Hazardous Waste Management Plan to comply with RCRA, state, and Air Force regulations. The Hazardous Waste Management Plan establishes the procedures, training requirements, inspections, and record management processes for hazardous waste (Travis AFB, 1999). The Base has one facility, Building 1365, permitted for long-term storage of hazardous waste. Building 1365 is managed by the 60th Civil Engineering Squadron Environmental Flight (CES/CEV) and operated by contractors (Travis AFB, 2002a).

3.4.2 Solid Waste

Nonhazardous waste generated at Travis AFB during fiscal year 2001 totaled 45.5 tons per day (16,600 tons for the year), including both recycled waste and waste sent to a disposal facility. The amount of recycled waste, which includes composting, mulching, recycled, reused, donated, and concrete (construction/demolition) waste, averaged approximately 20 tons per day (7,470 tons for the year). The amount of nonhazardous waste sent to a disposal facility averaged approximately 25 tons per day (9,150 tons for the year) (Travis AFB, 2002a). Nonhazardous solid wastes and refuse at Travis AFB are collected and disposed of by Solano County Garbage Company. Some organic matter is incinerated onbase at one of two incinerators. All solid waste is disposed of in accordance with the Solid Waste Management Plan.

3.4.3 Environmental Restoration Program Sites

Travis AFB has several environmental cleanup sites. The Base has implemented the ERP, administered by the 60 CES/CEV Restoration Element, to remediate all accident, disposal, and spill sites that might pose a potential threat to human health and welfare or the environment. ERP sites include former landfills, spill areas, waste disposal sites, drum storage areas, underground storage tanks (UST) and piping, waste treatment plants, and munitions disposal sites. Some ERP sites have had extraction/remediation systems installed to facilitate site cleanup (Travis AFB, 2003a).

The Trans wash rack facility is located with the boundary of ERP Site SS016. Site SS016 occupies 210 acres near the Base control tower and runway. The following potential sources of groundwater contamination have been identified at Site SS016 (CH2M HILL, 2003):

- The oil-spill area (OSA) in the vicinity of Facility 18
- Facility 11
- Facilities 13 and 14
- Facility 20 (Base control tower)
- Facilities 42 and 1941
- Facilities 139 and 144
- Storm sewers located in the storm sewer right-of-way

With the exception of Facilities 139 and 144, potential sources of groundwater contamination are more than 200 feet from and hydraulically downgradient of the Trans wash rack. Facilities 139 and 144 are located south of Hickam Avenue and east of Broadway Street, approximately 200 feet west of the Trans wash rack location (see Figure 3-1). The facilities were constructed in 1954 and 1945, respectively, to perform vehicle maintenance, including bodywork, painting, and radiator cleaning. A leaking, 2,000-gallon UST

containing solvent was removed from the area in 1985. Floor drains in the shop at Facility 139 are connected to two O/WSs. Past operations at Facility 144 included surface disposal of radiator test tank fluid (Roy F. Weston, Inc., 1995).

The following contaminants of concern (COC) have been identified at ERP Site SS016 (Air Force, 1997):

- TCE
- Cis-1,2-DCE
- Vinyl chloride
- Benzene
- Chloroform
- 1,4-DCB
- Dichlorobromomethane
- 1,2-DCA
- 1,1-DCE
- PCE
- Bis(2-ethylhexyl)phthalate
- Nickel

TCE is the indicator chemical for Site SS016 groundwater contamination (CH2M HILL, 2001b). Figure 3-1 shows the TCE distribution at wells sampled during the 2002-2003 Groundwater Sampling and Analysis Program monitoring period at Site SS016 (CH2M HILL, 2003).

A combination of monitored natural attenuation, extraction, treatment, and discharge was selected as the interim remedy for Site SS016 in the *Groundwater Interim Record of Decision for the North, East, and West Industrial Operable Units* (Air Force, 1997). The interim Record of Decision does not contain land use constraints. The objective of groundwater extraction at Site SS016 is twofold: source control in the area of the Base control tower and oil-spill area, and migration control downgradient (southeast) of the oil-spill area (Air Force, 1997).

3.4.4 Stored Fuels

Fuel is stored onbase in USTs and aboveground storage tanks (AST). Fuel is supplied to the flightline using a hydrant system that is supplied by seven bulk ASTs with a combined capacity of almost 7 million gallons. The hydrant fueling system is also associated with 21 USTs and 2 smaller ASTs that have a combined capacity of almost 19 million gallons (Travis AFB, 2002a).

Gasoline and diesel fuel used for military vehicles and ground equipment are stored in both ASTs and USTs in various locations at the Base. Thirty USTs are currently in use and regulated by the California UST program. Activities for removal and/or replacement of 20 USTs are being conducted under the Solano County and California UST programs. The Base also has 38 deferred/exempt USTs. A Motorpool Compound Refueling Station is located at Building 133, south of the wash rack (Travis AFB, 2002a). This facility has two USTs that store gasoline and diesel fuel.

3.5 Water Resources, Floodplains, and Wastewater

This section provides a general description of the groundwater and surface water resources, floodplains, and wastewater at Travis AFB.

3.5.1 Groundwater

The depth to unconfined groundwater aquifers at Travis AFB varies seasonally from approximately 12 to 30 feet below ground surface. Intensive extraction of groundwater does not occur onbase because of poor water-bearing subsurface geology. Intensive extraction occurs west of Travis AFB and the City of Fairfield, where the alluvium is thicker and contains a larger amount of coarse-grained sediment. Groundwater wells in the area of Travis AFB are limited to domestic, stock-watering, and irrigation wells with typical screened depths within 100 feet of ground surface (CH2M HILL, 2001). Domestic wells, several of which are downgradient from Travis AFB, are typically used to provide water to households for domestic use (CH2M HILL, 2001). Solano County does not supply water to the residences surrounding Travis AFB. The two nearest domestic wells are within 1,700 feet of the south boundary of Travis AFB.

Onbase wells are not used for potable water production. However, several wells located 4 miles north of Travis AFB, at the Cypress Lakes Golf Course (Annex 10), produce 400 to 500 million gallons of water per year. The well water is mixed with surface water purchased from the City of Vallejo to supply potable water to Travis AFB. The Fairfield public water supply field is located approximately 3 miles west of Travis AFB. The large production wells at the golf course and in Fairfield tend to be deeper, as much as 1,000 feet below ground surface, than the nearby domestic wells (CH2M HILL, 2001).

The groundwater gradient beneath Travis AFB flows to the south and follows the regional trend. The horizontal hydraulic gradient ranges from 0.003 to 0.005 vertical foot per horizontal foot in the upper portion of the aquifer (URS, 2004). In the deeper portion of the aquifer, the hydraulic gradient ranges from 0.003 to 0.10 vertical foot per horizontal foot (Air Force, 1998).

3.5.2 Surface Water

Travis AFB is located in the northeastern portion of the Fairfield-Suisun Hydrologic Basin. Within this basin, water generally flows south to southeast toward Suisun Marsh, an 85,000-acre tidal marsh that is both the largest contiguous estuarine marsh and the largest wetland in the continental U.S. (CH2M HILL, 2001). Suisun Marsh drains into Grizzly and Suisun Bays. Water from these bays flows through the Carquinez Strait to San Pablo Bay and San Francisco Bay, and ultimately discharges into the Pacific Ocean near the City of San Francisco.

Travis AFB lies in the southern portion of the Union Creek watershed. The headwaters of Union Creek are located approximately 1 mile north of the Base, near the Vaca Mountains, where the creek is an intermittent stream. Union Creek splits into two branches north of the Base. Onbase, the main (eastern) branch is impounded into a recreational pond designated as the Duck Pond. At the exit from the Duck Pond, the creek is routed through an

underground storm drainage system to the southeastern Base boundary, where it empties into an open creek channel.

The west branch of Union Creek flows south and enters the northwestern border of the Base, east of the David Grant Medical Center, in an excavated channel. This channel flows south and parallels Ragsdale Street for approximately 4,000 feet. Flow in the channel is then directed to a culvert under the runway and discharges to the main channel of Union Creek at Outfall II. From Outfall II, Union Creek flows southwest and discharges into Hill Slough, a wetland located 1.6 miles from the Base boundary. Surface water from Hill Slough flows into Suisun Marsh.

Union Creek is the primary surface water pathway for runoff at Travis AFB. Stormwater runoff flows into the creek through a network of pipes, culverts, and open drainage ditches. Local drainage patterns have been substantially altered within the Base by the rerouting of Union Creek, the construction of the aircraft runway and apron, the installation of storm sewers and ditches, and general development, such as construction of buildings, roads, and parking lots. The surface water collection system divides the Base into eight independent drainage areas, shown on Figure 3-2. The eastern portion of the Base (Drainage Basin XE) is served by a drainage system that collects runoff from along the runway and the inactive sewage treatment plant area and directs it to Denverton Creek and Denverton Slough. Denverton Creek is an intermittent stream near the Base. The northwestern portion of the Base (Drainage Basin XW) drains to the west toward the McCoy Creek drainage area. McCoy Creek is also an intermittent stream near the Base. The remaining six drainage areas at the Base empty into Union Creek (CH2M HILL, 2001).

3.5.3 Floodplains

The two branches of Union Creek (see Section 3.5.2) are located within the 100-year floodplain. The western branch of Union Creek, located within the floodplain, is 15,000 feet long; its depth varies from 4 to 15 feet and its width from 15 to 25 feet. The total area encompassed by the western branch of Union Creek is 8.6 acres (Travis AFB, 2003a).

Approximately 25 acres of the eastern branch of Union Creek are in the floodplain (Travis AFB, 2003a). This area includes the Duck Pond and associated riparian regions. The remaining acreage consists of 17,000 feet of Union Creek. The depth of the creek along this stretch varies from 4 to 15 feet and its width from 10 to 15 feet.

Approximately 38 percent of Travis AFB consists of impervious areas. To prevent flooding, runoff from these impervious areas enters the stormwater drainage system. The Base's stormwater drainage system is designed to accommodate a 10-year, 24-hour storm (Travis AFB, 2003a).

3.5.4 Wastewater

Industrial and sanitary wastewater produced from lavatories, showers, and janitorial sinks in all buildings and from housing units are discharged to the sanitary sewer system. The system consists of more than 41 miles of steel, asbestos, concrete, and plastic gravity sewers and force mains ranging in size from 4 to 21 inches, and 10 pump stations. Sewage flows to the Fairfield-Suisun Sewer District sewage treatment facilities via a main adjacent to the south gate. The contract between the Base and the Fairfield-Suisun Sewer District is based

on an average daily flow of 1.6875 million gallons per day. In fiscal year 2001, the average flow from the Base was approximately 1.6 million gallons per day, with a peak recorded flow of 2.24 million gallons per day. Sanitary and de minimis industrial wastes are discharged from the Fairfield-Suisun Sewer District under permit no. 433-02 (Travis AFB, 2002a).

Because much of the system was installed more than 40 years ago, approximately 6,800 feet of sewers are overloaded during a 5-year storm event. The overall condition of the sanitary sewer system is degraded, due to the deteriorated condition of the piping system and the occurrence of infiltration and inflow. The Base is currently in the process of determining the scope and timing of repair projects for the system. According to the Travis AFB General Plan, the system will not be considered adequate to meet future conditions until significant improvement projects have been completed (Travis AFB, 2002a).

3.6 Biological Resources

The Trans yard is located in the developed part of the Base. The yard is entirely paved and neither plant nor wildlife species are present.

3.6.1 Areas Subject to Regulation under Sections 404 and 401 of the Clean Water Act

3.6.1.1 Overview

The U.S. Army Corps of Engineers (USACE) regulates discharge of dredge and fill material into waters of the U.S. (including wetlands) under Section 404 of the CWA. Waters of the U.S. are defined as all navigable waters, including the following:

- Tidal waters
- Interstate waters and wetlands
- Other waters such as lakes, rivers, streams (perennial or intermittent), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds; the use, degradation, or destruction of which could affect interstate commerce
- Impoundments of water mentioned above
- Tributaries to waters mentioned above
- Territorial seas
- Wetlands adjacent to waters mentioned above

Waste treatment systems, including treatment ponds, are not waters of the U.S. (33 CFR Section 328.3).

Wetlands are areas that “are inundated by surface or ground water with a frequency sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (USACE, 1987). Any actions that involve the placement of fill material into jurisdictional waters and wetlands must comply with Sections 404 and 401 of the CWA.

According to the protocols outlined in 1987 by the USACE, the limits of wetlands are determined through implementation of the USACE’s three-parameter test, which examines soils, wetlands, and hydrology. The limit of jurisdictional waters of the U.S. (including wetlands) in nontidal waters extends to the ordinary high-water line, to adjacent wetlands above the ordinary high water line, or, if not adjacent, to the limit of the wetland. The ordinary high-water line is defined as the line on the shore established by the fluctuation of water and indicated by physical characteristics such as a natural line impressed on the bank, shelving, scouring, changes in the character of the soil, destruction of terrestrial vegetation, presence of litter or debris, or other appropriate evidence (33 CFR Section 328.4).

The term adjacent means bordering, contiguous, or neighboring. Wetlands separated from other waters of the U.S. by constructed dikes or barriers, natural river berms, and beach dunes are adjacent wetlands. When waters of the U.S. consist only of wetlands, the jurisdiction extends to the limits of the wetlands (33 CFR Section 328.3(c)).

3.6.1.2 Recent Changes in U.S. Army Corps of Engineers Jurisdiction

USACE has been determining the scope of its jurisdiction over isolated wetlands under the CWA since the recent Supreme Court ruling in *Solid Waste Agency of Northern Cook County vs. U.S. Army Corps of Engineers*. This ruling found that the Migratory Bird Rule, used to bring isolated wetlands into jurisdiction based on a link to interstate commerce, is not fairly supported by the CWA, and that USACE cannot solely rely on this rule as the basis for jurisdiction. The Supreme Court found that on this basis, regulation of isolated, intrastate, and non-navigable waters is outside the authority of the CWA.

In addition to the Migratory Bird Act, other connections with interstate commerce might support the assertion of CWA jurisdiction. Jurisdiction might also be possible if the use, degradation, or destruction of the wetlands could affect other waters of the U.S. Additionally, the Supreme Court affirmed that isolated wetlands determined to be adjacent to navigable waters are still subject to USACE jurisdiction. As described in *United States vs. Riverside Bayview Homes*, USACE’s jurisdiction over navigable waters extends to tributaries to navigable waters, upstream to the highest reaches of the tributary system, and to all wetlands adjacent to any and all of those waters.

3.6.1.3 Riparian Habitat

Riparian vegetation grows along the shores of freshwater creeks, rivers, and lakes. Riparian wetlands at Travis AFB are limited to the banks of Union Creek. The most extensive riparian wetland is located along the northern portion of the eastern branch of Union Creek, upstream of the Duck Pond (Travis AFB, 2003a). Although willows and coyote brush can be found along Union Creek, the dominant plant species found in the riparian zone of Union

Creek are mainly herbaceous and consist of beardless wild rye (*Leymus triticoides*), Harding grass (*Phalaris aquatica*), and saltgrass. A noxious weed species, broad-leaved pepperweed (*Lepidium latifolium*), also occurs in this habitat type. Hydrophytes, such as cattails and rushes, are also commonly found at the toe of the creek slope, at the transition between riparian habitat and emergent marsh (CH2M HILL, 2001).

3.6.1.4 Vernal Pools

Vernal pools are shallow depressions or small, shallow pools that fill with water during the winter rainy season, then dry out during spring and become completely dry during summer. Most vernal pools at Travis AFB are northern claypan vernal pools that occur on deep alluvial soils. Vernal pools have developed an ecologically unique flora that has evolved to tolerate the extreme wetting and drying cycles. Vernal swales, which are ecologically and floristically similar to vernal pools, also occur at Travis AFB. Vernal swales consist of drainways or poorly defined depressions that are inundated seasonally, but hold standing water for relatively short periods (Travis AFB, 2003a).

During the time that vernal wetlands contain water, biotic communities develop over relatively restricted areas. A federally listed species, vernal pool fairy shrimp (*Branchinecta lynchi*), inhabits some of the vernal pools (Travis AFB, 2003a). Overall, 110 species of plants have been historically identified in vernal wetlands at the Base, including three species – alkali milkvetch (*Astragalus tener* var. *tener*), Contra Costa goldfields (*Lasthenia conjugens*), and the San Joaquin sparscale (*Atriplex joaquiniana*) – that are considered special-status species by the California Native Plant Society. Brittle scale (*Atriplex depressa*) has also been observed at Travis AFB. Contra Costa goldfields is listed as federally endangered.

Vernal pools are found throughout the Base. These sites vary in size from 1 acre to less than 50 ft², and can be a single pool, swale, or large, hydrologically associated pool cluster (Travis AFB, 2003a). The vernal wetlands are concentrated along the western, southern, and southeastern boundaries of the Base. The highest quality, intact vernal pools are located on the northwestern portion of the Base. There are no vernal pools within 1,000 feet of the Proposed Action area.

3.6.2 Special-status Species

Special-status species consist of species that are listed by the U.S. Fish and Wildlife Service or the California Department of Fish and Game (CDFG) as rare, threatened, or endangered and plant species listed by the California Native Plant Society. Table 3-3 lists special-status species potentially occurring at Travis AFB. The information for this section was taken from the Travis AFB Integrated Natural Resources Management Plan (Travis AFB, 2003a), the Travis AFB General Plan (Travis AFB, 2002a), CDFG's California Natural Diversity Database (CDFG, 2004), and the California Native Plant Society Inventory (California Native Plant Society, 2001).

3.6.2.1 Federally Listed Species

Various basewide studies conducted between 1994 and 2004 have identified four federally listed species at Travis AFB and the potential for eight others. These species are associated with wetland habitats and are present at many locations across the Base, but are absent from the Proposed Action site. The following federally listed species have been identified at Travis AFB:

- Contra Costa goldfields (*Lasthenia conjugens*), a federally endangered plant species
- Vernal pool fairy shrimp (*Branchinecta lynchi*), a federally threatened invertebrate species
- Vernal pool tadpole shrimp (*Lepidurus packardi*), a federally endangered crustacean species
- California tiger salamander (*Ambystoma californiense*), a federally threatened amphibian species (CDFG, 2004)

TABLE 3-3

Special-status Species Potentially Occurring at Travis Air Force Base
Environmental Assessment for the Replacement of a Vehicle Wash Rack, Travis Air Force Base, California

Species Common Name	Species Scientific Name	Protection Status	Presence
Plants			
Contra Costa goldfields	<i>Lasthenia conjugens</i>	FE	K
Crampton's tuctoria	<i>Tuctoria mucronata</i>	FE/SE	P
Showy Indian clover	<i>Trifolium amoenum</i>	FE	P
Colusa grass	<i>Neostapfia colusana</i>	FT/SE	P
Boggs Lake hedge-hyssop	<i>Gratiola heterosepala</i>	SE	P
Animals			
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	FT	K
California tiger salamander	<i>Ambystoma californiense</i>	FT	K
California red-legged frog	<i>Rana aurora draytonii</i>	FT	P
Giant garter snake	<i>Thamnophis couchi gigas</i>	FT/ST	P
Delta green ground beetle	<i>Elaphrus viridis</i>	FT	P
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	FT	P
Vernal pool tadpole shrimp	<i>Lepidurus packardi</i>	FE	K
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	FE	P

Sources: Travis AFB, 2003a; CDFG, 2004

Notes:

FE = Federal Endangered

FT = Federal Threatened

SE = State Endangered

ST = State Threatened

K = Known to occur at Travis AFBP

= Potential to occur at Travis AFB

In a 1999 study, Contra Costa goldfields (*Lasthenia conjugens*) were identified in the north-west part of the Base and at the southwest end of the main runway. The vernal pool fairy shrimp (*Branchinecta lynchi*) has been identified in several studies and is likely to be present in many of the vernal pools within the Base. A dead California tiger salamander

(*Ambystoma californiense*) was found on the site of the Castle Heights housing area prior to construction (Travis AFB, 2002a).

Although no other federally listed threatened or endangered species are known to be present at the Base (Travis AFB, 2002a), the following eight (Travis AFB, 2003a) species have the potential to occur onbase because suitable habitat is present:

- Crampton's tuctoria (*Tuctoria mucronata*), a federally endangered plant species
- Showy Indian clover (*Trifolium amoenum*), a federally endangered plant species
- Colusa grass (*Neostapfia colusana*), a federally threatened plant species
- California red-legged frog (*Rana aurora draytonii*), a federally threatened amphibian species
- Giant garter snake (*Thamnophis couchi gigas*), a federally threatened reptile species
- Delta green ground beetle (*Elaphrus viridis*), a federally threatened insect species
- Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), a federally threatened insect species
- Conservancy fairy shrimp (*Branchinecta conservatio*), a federally endangered crustacean species

3.6.2.2 State-listed Species

The Swainson's hawk (*Buteo swainsoni*) is known to nest onbase, and suitable habitat can be found in the annual grasslands scattered across the Base and the riparian habitat of Union Creek in the southern part of the Base (Travis AFB, 2002a). The following four species have the potential to occur at Travis AFB because suitable habitat is present:

- Boggs lake hedge-hyssop (*Gratiola heterosepala*), a state-listed endangered plant species
- Crampton's tuctoria (*Tuctoria mucronata*), a state-listed endangered plant species
- Colusa grass (*Neostapfia colusana*), a state-listed endangered plant species
- Giant garter snake (*Thamnophis couchi gigas*), a state-listed threatened reptile species

3.7 Socioeconomic Resources

Socioeconomic resources include the population, income, employment, and housing conditions of a community or region of influence. Socioeconomic conditions could be affected by changes in the rate of population growth, the demographic characteristics of a community, or employment within the region of influence caused by the implementation of the Proposed Action.

The population of Solano County is approximately 412,000 (U.S. Census Bureau, <http://quickfacts.census.gov/qfd/states/06/06095.html>). Travis AFB is the largest employer in Solano County, employing more than 14,000 people, including 3,494 civilians. It provides approximately 10 percent of the total local employment and has an annual payroll of \$451 million. The Base adds an annual value of \$176 million to the community by creating an estimated 5,300 indirect jobs. Travis AFB workers participate in numerous group and charity projects and contribute more than \$333,000 annually to charitable

organizations. The Base's overall impact on the county and surrounding area is estimated to be in excess of \$790 million (Travis AFB, 2002a).

The Base is located in a rapidly growing part of the San Francisco Bay Area. Solano County grew at a rate 50 percent higher than the whole Bay Area between 1990 and 2000. During the same period, the City of Fairfield grew at twice the overall rate. This accelerated rate of growth is expected to continue, and more than 80,000 additional residents are expected to migrate to Solano County by 2010. The local communities are creating development patterns that are compatible with the Base and its mission through their local plans and ordinances (Travis AFB, 2002a).

Approximately 14 percent of the military personnel who live offbase reside in Vacaville, and another 6 percent reside within the City of Fairfield. More than 8,700 military personnel retire to the area surrounding Travis AFB (Travis AFB, 2003c).

3.8 Cultural Resources

3.8.1 Cultural History

The region in which Travis AFB is located was once inhabited by the Southern Patwin (or Wintuan) tribe of Native Americans. The early inhabitants of the region established tribelets (villages) adjacent to freshwater marshes and hunted, gathered, and fished for subsistence. The primary tribelets in a region were the Suisun and Talenas. Spanish missionaries arrived circa A.D. 1750 to find a proto-agriculture culture existing in the region (Travis AFB, 2003b). The Southern Patwin were adversely affected by mission activities, disease, and disruption by gold miners, who eventually became settlers, and had largely abandoned the area prior to epidemics of malaria and smallpox in 1833 and 1837. Descendants of the Southern Patwin currently reside in the northern part of their former range in the Sacramento Valley (URS, 2004).

The area surrounding Travis AFB is cultivated for agricultural products and grazing livestock. These activities were first performed during the Spanish Mission Period and later by Mexicans and European Americans during the Mexican Period and early American Period. The Spanish ruled the region from 1750 until the Mexican government took control in 1830. American rule replaced Mexican rule beginning in the 1840s (Travis AFB, 2003b).

The land currently occupied by Travis AFB was initially known as "poor man's acres" and was not considered prime farmland. The first known settler, a farmer named Brinkerhoff, arrived in the 1850s. The Base site was historically used for ranching and limited irrigated farming (Travis AFB, 2003b).

Travis AFB was originally created as a temporary bomber base in 1942. The location was quickly recognized as an excellent air transport facility and was commissioned as the Fairfield-Suisun Army Air Base in 1943. In 1950, the Base was renamed after a former commander of the 9th Heavy Bombardment Wing, Brigadier General Robert Falligant Travis. Today, Travis AFB is known as "The Gateway to the Pacific" and is among the largest and busiest military air terminals in the U.S.

3.8.2 Cultural Resource Investigations and Resources

Since 1909, 19 cultural resource studies have been conducted at Travis AFB or in the surrounding area. These studies identified 10 archeological sites and 27 buildings and structures on Base property that were significant. Three of the archeological sites were prehistoric and the remaining seven were historic sites. All 10 sites were evaluated for eligibility for the National Register of Historic Places and were deemed not eligible. Twenty-seven buildings and structures associated with the Cold War are potentially eligible for inclusion on the National Register of Historic Places, and are the only known cultural resources at Travis AFB (Travis AFB, 2003b). None of the 27 potentially historic buildings is located near the Proposed Action.

3.9 Land Use

Travis AFB occupies approximately 5,128 acres of land near the center of Solano County, California (Travis AFB, 2002a). The Base is located less than 5 miles east of downtown Fairfield and approximately 8 miles south of downtown Vacaville (see Figure 1 -1). Solano County's population in 2000 was 394,542 (U.S. Census Bureau, 2000). This population grew to approximately 412,000 by 2003 (<http://quickfacts.census.gov/qfd/states/06/06095.html>). From 1980 to 1990, the population of Solano County increased nearly 45 percent; however, the rate of growth declined from 1990 to 2000 (16 percent) and from 2000 to 2003 (4.5 percent, estimated) (U.S. Census Bureau, 2000).

3.9.1 Land Use Categories

The land use areas of Travis AFB are grouped into 12 functional categories, as follows:

- **Airfield** – Uses consist of pavement system, related open space, navigational aids, and airfield and airway clearance surfaces.
- **Aircraft Operations and Maintenance** – Uses include aircraft operations, aircraft maintenance, aircrew and maintainer training facilities and passenger and freight terminal facilities.
- **Industrial** – Uses include fire stations, Base supply and equipment complex, fuel facilities, vehicle maintenance, civil engineer complex, open storage, utilities infrastructure, emergency response, ordinance and weapons storage and other industrial uses.
- **Administrative** – Uses include personnel, family services, police and security, wing/group headquarters, legal services, communications, gate and visitor management, and other support facilities.
- **Community (Commercial)** – Uses include the exchange, commissary, banking, dining facilities, eating establishments, indoor recreation facilities and service stations. Supports the needs of personnel and their families.
- **Community (Service)** – Uses include schools, education centers, and library, chapel, post office, and child development facilities. Supports the needs of personnel and families.

- **Medical** – Uses include medical, dental, and Veterans Administration clinics, veterinary clinics, and bio-environmental engineering facilities.
- **Housing (Accompanied)** – Uses include family housing, mobile home parks, and temporary lodging facilities.
- **Housing (Unaccompanied)** – Uses include dormitories for bachelors and quarters for visiting personnel.
- **Outdoor Recreation** – Uses include activities such as golf and swimming, park and picnic facilities, and recreation equipment checkout and storage.
- **Open Space** – Uses include conservation and preservation areas, safety, security, and buffer zones, including spaces that are unsuitable for development.
- **Water** – Uses include open space and outdoor recreation activities, and also buffer space between incompatible uses, in the form of ponds, streams, lakes, shorefronts and oceans.

3.9.2 Land Use Restrictions

Land use restrictions and controls are established as buffers surrounding certain facilities to protect human health from potential adverse effects. For example, protective buffer zones are designated around the munitions storage areas in the event of accidental explosions. In some parts of the Base land use controls (LUC) are formally in place to protect human or environmental health from contaminated soils or water.

Travis AFB has established explosive safety quantity-distance zones to protect onbase military and civilian population from hazards associated with the handling and/or storage of explosives. The radii of the quantity-distance zones range from 1,250 to 2,100 feet. These zones ensure that any area where explosives are stored or handled (e.g., the munitions storage area) are separated from the following:

- Other areas containing explosives or propellants
- Petroleum, oil, and lubricant storage
- Inhabited buildings and facilities not related to explosives operations
- Aircraft parking, storage, and operation areas

3.9.3 Land Use Surrounding Travis Air Force Base

The lands surrounding Travis AFB on the northeast and east are primarily used for ranching and grazing. Areas to the south are a combination of agricultural and marshland. A few commercial/light industrial areas are present to the north of the Base. The area west of Travis AFB is predominantly residential.

3.10 Transportation System

The following section describes the components of the transportation system at Travis AFB. Information regarding the transportation system has been summarized from the Travis AFB General Plan (Travis AFB, 2002a).

3.10.1 Roadways/Streets

The roadway network serving Travis AFB consists of several major thoroughfares, including Travis Avenue, Ragsdale Street/Cannon Drive, Burgan Boulevard, Parker Road, Hickam Avenue, and Hangar Avenue. Ragsdale Street is a two- to four-lane road oriented in a north-south direction. Ragsdale Street is centrally located, and therefore serves much of the traffic to and from the flightlines and freight-handling areas. Minor streets, branching off from these main roadways are Skymaster Drive, Broadway Street, and 1st Street, which serve as collector facilities for the Base. The Travis AFB General Plan (Travis, 2002a) does not identify traffic issues associated with the main thoroughfares, and major traffic improvement projects are not planned.

3.10.2 Other Facilities

Other facilities within Travis AFB's transportation system include the following:

- **Parking.** Parking facilities are generally associated with each building on the Base. Two areas have been identified as having either insufficient parking capacity or design flaws – the parking area that serves the Child Development Center, the mini-mall, and the Credit Union; and the parking area serving Erwin Hall.
- **Sidewalks.** Pedestrian walkways are provided in most industrial and residential areas, and along major roadways. There are also pedestrian walkways around the Duck Pond, located in the northeastern portion of the Base, and through the greenbelt that extends from just south of North Gate Park at Burgan Boulevard to Cannon Drive.
- **Bicycle Paths.** To keep bicycle paths separate from roadways, many facilities are shared with pedestrians. New paths are being constructed along Burgan Boulevard, Broadway Street, Hickam Avenue, and Hangar Avenue.
- **Mass Transit.** Travis AFB's "Blue Bus System" provides transportation around commercial centers and to and from the flightline. This system is only intended for transportation associated with work-related activities.
- **Passenger/Cargo Terminal.** The terminal is located at the south end of Burgan Boulevard and is accessed via a passenger-loading zone in front of the terminal. The terminal is scheduled to be upgraded, including improvements of the circulation system.
- **Railheads.** One rail spur connects the Base with the Union Pacific Railroad. The spur enters the Base on the east (near the Flying Club runway) and ends near Building 572. An inactive wye track is located in the tank farm area.

3.11 Airspace/Airfield Operations

Airfield operations refer to any takeoff or landing at an air base. In fiscal year 2003, the air crews at Travis AFB flew more than 68,000 hours, hauling 300 million pounds of cargo and 93,000 passengers (Travis AFB, 2003c). Daily operations are conducted by several units stationed at the Base. These units are described below.

3.11.1 Airfield Safety

Travis AFB has established several clearance zones, in accordance with Unified Facilities Criterion 3-260-01. Clearance zones are imaginary surfaces developed to promote safe operations in the airfield vicinity, and include the following:

- **Primary Surface.** This area extends 200 feet beyond each end of the runway and 1,000 feet on both sides of the runway centerline.
- **Clear Zone.** This zone extends 3,000 feet from the end of the runway and 1,500 feet on either side of the runway centerline.
- **Accident Potential Zones I and II.** Accident Potential Zone I extends 5,000 feet from the clear zone; Accident Potential Zone II extends an additional 7,000 feet from the edge of Accident Potential Zone I.
- **Approach/Departure Clearance Surface.** This surface was established to ensure safe landing/takeoff of aircraft at Travis AFB. The inclined plane, which is 2,000 feet wide at one end of the runway and 16,000 feet wide at the opposite end, extends 50,000 feet outward from the runway, at a slope of 50:1 along the runway centerline, to an elevation of 500 feet above ground surface. Activities are limited in this area to ensure safe aircraft operation. Restricted activities include: those that penetrate the clearance surface; those that would release substances into the atmosphere which could reduce visibility or impair the pilot's vision (smoke, dust, light emissions); those that produce emissions which could impact aircraft operation (communication or navigational equipment); and those which could attract birds.
- **Transitional Imaginary Surface.** The transitional surface is an inclined plane extending outward and upward, beginning at 1,000 feet from the runway centerline, at right angles to the centerline, at a slope of 7:1.
- **Taxiway Clearance Line.** This zone extends 200 feet from the taxiway centerline. There are to be no obstacles, fixed or mobile, within this zone.

The Proposed Action is not located in an airspace or airfield operations area. United Facilities Criterion 3-260-01 states that, to meet specific airspace/airfield operations criteria, construction must be more than 1,000 feet from the runway centerline, and constructed structures should be under a 7:1 ratio from the 1,000-foot line. AFI 32-7084 lists the compatibility of various land uses with the different types of zones surrounding the airfield.

3.11.2 60th Air Mobility Wing

The 60th Air Mobility Wing is the host unit at Travis AFB, and operates the C-5 Galaxy cargo aircraft (21st and 22nd Airlift Squadrons) and the KC-10 Extender refueling aircraft (6th and 9th Airlift Squadrons) (Travis AFB, 2002a). The mission of this strategic unit is "to provide quality services and support for America's Global Reach through a responsive and flexible combat-ready air mobility force." The unit is capable of providing cargo, passenger, and patient airlift (including troop and equipment deployment and humanitarian support) in addition to aerial refueling. The unit is divided into four groups, as follows:

- 60th Maintenance Group
- 60th Medical Group
- 60th Operations Group
- 60th Mission Support Group

3.11.3 Tenant Units

The 349th, a reserve unit, is the primary tenant unit at Travis AFB, and also operates the C-5 Galaxy cargo aircraft and the KC-10 Extender refueling aircraft (Travis AFB, 2002a).

Other tenant units include the following:

- The U.S. Army Reserve Division, 3rd Brigade, 91st Division
- The Air Mobility Command Band of the Golden West
- The Area Defense Counsel
- The 15th Expeditionary Mobility Task Force
- The 615th Air Mobility Operations Group, including the 715th and 815th Air Mobility Operations Squadrons
- The U.S. Navy Fleet Air Reconnaissance Squadron THREE Detachment, Travis (flying the E-6A Mercury)
- The Air Force Auxiliary Civil Air Patrol, Travis Composite Squadron 22
- The 373rd Training Squadron, Training Detachment 14 (Air Education and Training Command)

Travis also provides support elements to three regional Air Force ROTC units, as follows:

- Detachment 85, University of California at Berkeley
- Detachment 045, San Jose State University, California
- Detachment 88, California State University, Sacramento

3.12 Safety and Occupational Health

Safety and occupational health is managed by BioEnvironmental.

Construction site safety and accident prevention are ongoing activities for all Air Force job sites. As part of the contracts for construction services, standard terms and conditions include safety as a priority. Areas of concern include compliance with regulations typical to construction projects, such as confined-space regulations, handling of hazardous materials, minimum personal protection equipment standards, and limited access to the construction area.

3.13 Environmental Management (Including Geology, Soils, and Pollution Prevention)

The following sections describe the regional geology of Travis AFB, soil types present, and Pollution Prevention Plans that are in place at the Base.

3.13.1 Geology

Travis AFB is located on the western edge of the Sacramento Valley segment of the Great Valley Geomorphic Province. The Coast Range Geomorphic Province, which consists of folded and uplifted bedrock mountains, lies just to the west of Travis AFB (Thomasson et al., 1960; Olmsted and Davis, 1961).

The land surface structure (geomorphology) of Travis AFB is characterized by gently sloping alluvial plains and fans. These coalescing, low-relief fans were deposited by Ulati, Union, Alamo, Laurel, and Suisun Creeks. Most of the alluvial material was deposited prior to the last period of glaciation during the Pleistocene Epoch, and is referred to as Older Alluvium. During the last 15,000 years, as sea levels have risen, the drainages have refilled with alluvium. This material is referred to as Younger Alluvium. Some topographic relief in the form of very low ridges is provided by outcroppings of sedimentary rock in the Travis AFB area.

Figure 3-3 is a geologic map illustrating the distribution of shallow bedrock units and alluvium in the vicinity of Travis AFB. Bedrock at Travis AFB consists of consolidated to semiconsolidated sedimentary rock.

Uplift of the Coast Ranges and sedimentary deposition in adjacent basins continued throughout the Pleistocene Epoch, and formed the current Fairfield-Suisun Hydrologic Basin. Travis AFB is located on an alluvial fan that extends from the Vaca Mountains to Suisun Marsh. The alluvium in the vicinity of Travis AFB originated from the erosion of the elevated bedrock formations and subsequent deposition in various continental environments. Sediment eroded from the Vaca Mountains has been carried in several streams (e.g., Union Creek) which have migrated laterally across the Base.

At Travis AFB, the overall thickness of the alluvium ranges from 0 to approximately 70 feet, but is generally less than 50 feet. West of Travis AFB, the thickness of the alluvium increases to more than 200 feet (Thomasson et al., 1960).

Past tectonic processes folded and uplifted the bedrock to form the hills and mountains located north, west, and south of Travis AFB. Outcrops of relatively resistant Markley Sandstone, Domengine Sandstone, and Tehama Formation form most of the topographic high points on base.

Travis AFB is located within the San Francisco Bay region, a region that is susceptible to frequent earthquake activity. The USGS concluded that there is a 70 percent probability of at least one magnitude 6.7 or greater earthquake, capable of causing widespread damage, striking the San Francisco Bay region before 2030 (Travis AFB, 2002a).

The Vaca Fault system, shown on Figure 3-3, traverses the eastern portion of the Base. A potentially more devastating fault, the Green Valley Fault, is located 10 miles west of the

Base. The other and more prominent fault zones in the San Francisco Bay region are the San Andreas, Hayward, and Calaveras Faults, which are located 20 miles or more from the Base (Travis AFB, 2002a).

3.13.2 Soils

Soil develops from geologic material exposed at the earth's surface as the material is altered through physical, chemical, and biological processes. The nature of a soil is, in part, a function of climate, surface slope, time of exposure at the surface, and the type of original (parent) material. Soils in the vicinity of Travis AFB are classified as alfisols, which are primarily silt and clay loams that exhibit low permeabilities and poor drainage characteristics.

A soil map depicting the distribution of soil types for Travis AFB and vicinity is provided on Figure 3-4.

3.13.3 Pollution Prevention

Travis AFB has an active Pollution Prevention Program that strives to reduce the generation of wastes through a hierarchy of actions ranging from the preferred choice of source reduction to recycling, treatment, and finally disposal, as a last resort. The Pollution Prevention Management Action Plan defines the framework to accomplish these actions. The Pollution Prevention Management Action Plan analyzes all processes that use hazardous materials and generate hazardous waste streams and evaluates options to reduce the volume and/or toxicity of generated wastes. This program includes minimizing wastes generated by ERP sampling activities.

3.14 Environmental Justice and Protection of Children

EO 12898 (1994) requires each federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high human health or environmental effects of its programs, policies, and activities on minority populations and low income populations." A minority population can be described as being composed of people who identify themselves to the U.S. Census Bureau as American Indian or Alaskan Native, Asian or Pacific Islander, Black or African American, or of Hispanic origin, and where such population exceeds 50 percent of the population in an area or where the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population (CEQ, 1997).

Each year, the U.S. Census Bureau defines the national poverty thresholds, which are measured in terms of household income and the number of people within the household. Individuals falling below the poverty threshold (\$18,810 for a household of four in 2003) are considered low-income individuals (U.S. Census Bureau, 2004).

Solano is a large, demographically diverse county, with communities ranging from the urban areas of Vallejo and Fairfield in the southwest to small rural towns, such as Dixon and Rio Vista. The 2000 Census population of Solano County was 394,542, with 56.4 percent White (222,387 people) and 14.9 percent (58,827 people) African American; 17.6 percent of

the county's population is Hispanic. The percentage of individuals in Solano County below the poverty level was 8.3 (31,344 people) (U.S. Census Bureau, 2000).

The City of Vallejo, the largest city in Solano County, has approximately 30 percent (116,760 people) of the county's population. Vallejo is more diverse than the county as a whole, with a population that is 36 percent White, 23.7 percent African American, and 15.9 percent Hispanic. Approximately 10 percent of individuals in Vallejo are at or below the poverty level. Fairfield is the second largest city (96,178 people) in the county and the closest city to Travis AFB. Fairfield more closely reflects the cultural composition of the county. The greater part of the population in Fairfield is White (54,063, or 56.2 percent), with lower percentages of Hispanic (18.8 percent; 18,050 people) and African American (15.0 percent; 14,446 people). Approximately 9 percent of individuals live at or below the poverty level (U.S. Census Bureau, 2000).

The resident population of the Base was 11,598 people in 2003 (Travis AFB, 2003c). Although demographic data for Travis AFB was not available, the racial composition of the Air Force serves as an approximation of the racial composition of the Base. In 2003, the Air Force was 75.2 percent White, 15.6 percent African American, and the remaining 9.2 percent was composed of other races (Air Force, 2003).

Children are present on Travis AFB in family housing, child development centers, the Travis AFB youth center, schools, and playgrounds (Travis AFB, 2004).

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3-1 Environmental Resources and Infrastructure
Figure
(11 x 17, color)

Figure 3-1, continued

Figure
3-2 Drainage Basin Boundaries
(11 x 17, color)

Figure 3-2, continued

Figure
3-3 Geologic Map of Travis AFB and Vicinity
(8.5 x 11, color)

Figure 3-3, continued

Figure
3-4 Soil Types
(8.5 x 11, color)

Figure 3-4, continue

Environmental Consequences

4.1 Introduction

This section provides the regulatory background, as applicable, for various environmental resource areas and evaluates potential impacts resulting from demolition of the Trans wash rack and construction and operation of the proposed drive-through. The potential impacts to the human and natural environments were evaluated by comparing the Proposed Action to the No Action Alternative. The subsection for each environmental resource or issue assesses the anticipated direct and indirect impacts, considering both short- and long-term project effects. As described in the following subsections, no significant adverse environmental impacts are anticipated for replacement of the wash rack.

4.2 Air Quality

4.2.1 Laws and Regulations

4.2.1.1 Federal

The U.S. Congress adopted the CAA in 1970, and its amendments in 1977 and 1990. The CAA and amendments are the body of federal laws that require the U.S. Environmental Protection Agency (EPA) and the states to regulate air pollution emissions from stationary and mobile sources to protect public health and welfare. Air quality regulations were first promulgated with the CAA, and revised with the CAA Amendment. They are published in 40 CFR Sections 50 through 97 and 1048 through 1068.

The CAA requires EPA to establish and maintain NAAQS, used to manage air quality across the country. Pollutants for which standards have been established are termed criteria pollutants, because the standards are based on criteria that show a relationship between pollutant concentrations and effects on health and welfare. From this relationship, EPA establishes acceptable pollutant concentrations to serve as ambient air quality standards. As mandated by the CAA, EPA has established maximum threshold standards for the following criteria pollutants: CO, PM₁₀, PM_{2.5}, ozone, nitrogen dioxide, SO₂, and lead. Federal clean air laws require areas with unhealthy levels of ozone, CO, nitrogen dioxide, SO₂, and inhalable particulate matter to develop plans, known as State Implementation Plans (SIP), describing how they will attain NAAQS (see Section 4.2.1.2).

Under the conformity provisions of the Clean Air Act Amendment, no federal agency can approve or undertake a federal action, or "project," unless the project has been demonstrated to conform to the applicable SIP. These conformity provisions were put in place to ensure that federal agencies would contribute to efforts to attain the NAAQS. The EPA has issued two conformity guidelines: transportation conformity rules that apply to transportation plans and projects and general conformity rules that apply to all other federal

actions. A conformity determination¹ is only required for the alternative that is ultimately selected and approved. The general conformity determination is submitted in the form of a written finding, issued after a minimum 30-day public comment period on the draft determination.

Applicable only in areas designated as nonattainment or maintenance for NAAQS, the general conformity rule prohibits any federal action that does not conform to the applicable air quality attainment plan or SIP. General conformity applicability analysis requires quantification of direct and indirect, construction, and operation emissions for the project, and comparison of these emission levels to baseline emission levels. If the differences in emissions (the net emissions associated with the Proposed Action) exceed the general conformity de minimis levels for the peak year or any milestone year for attainment of standards, additional general conformity determination is required.

An action is exempt from the conformity rule (presumed to conform) if the total net project-related emissions (construction and operation) pass two tests: they are less than the de minimis thresholds established by the conformity rule, and they are not regionally significant (emissions are regionally significant if they exceed 10 percent of the total regional emission inventory). An action that produces emissions that exceed conformity thresholds, or is regionally significant, is required to demonstrate conformity with the SIP through mitigation or other accepted practices.

The CAA also requires preconstruction review of facilities and equipment that could potentially emit air contaminants. Permitting depends on the size of the emission source and its location in an attainment or nonattainment area. The BAAQMD is the agency with permitting authority in western Solano County (see Section 4.2.1.3).

4.2.1.2 California

The California Clean Air Act, approved in 1988, requires local air districts to develop and implement strategies to attain California's ambient air quality standards. CARB oversees California air quality policies. CAAQS were established in 1969 pursuant to the Mulford-Carrell Act. These standards are generally more stringent than the NAAQS, and limit four additional pollutants, including sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particulates (see Table 3-1).

The SIPs required by federal law are not single documents; they are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, and permitting), district rules, state regulations, and federal controls. CARB is the lead agency for all purposes related to the SIP. Local air districts and other agencies, such as the Bureau of Automotive Repair, prepare SIP elements and submit them to CARB for review and approval. CARB forwards SIP revisions to EPA for approval and publication in the Federal Register.

¹A conformity determination is a process that demonstrates how an action would conform to the applicable implementation plan. If the emissions cannot be reduced sufficiently, and if air dispersion modeling cannot demonstrate conformity, then either a plan for mitigating or a plan for offsetting the emissions would need to be pursued.

4.2.1.3 Bay Area Plans and Programs

As indicated previously, CARB is responsible for regulating air quality in California. BAAQMD implements standards and policies set forth by CARB. BAAQMD rules and regulations apply to all sources of emissions within the nine-county Bay Area region, including western Solano County. The Bay Area Air Quality Plan is a regional plan that addresses how the San Francisco Bay Area will attain NAAQS and CAAQS. The plans and regulations require that new and modified stationary emission sources must apply for air quality permits, and if applicable, implement control measures and install emission-control devices.

4.2.2 Alternative 1 – No Action

Under the No Action Alternative, construction would not occur and air pollutant emissions associated with construction would not be generated. Emissions from operations, including travel to the site, would not change from current conditions.

4.2.3 Alternative 2 – Proposed Action

The Proposed Action would cause temporary, short-term adverse impacts to air quality as a result of construction emissions. Construction-related impacts are expected to be local (i.e., confined to the construction site area) and limited to the duration of the construction activities. Potential impacts are expected to be less than significant.

Long-term adverse impacts would include the operation emissions from the new hot water boiler for the drive-through. The increase in mobile emissions would be negligible because the Proposed Action would not increase the trips or vehicle miles traveled to Travis AFB during its operation. Operational impacts are expected to be less than significant.

4.2.3.1 Construction and Operation Emissions

Construction Emissions. Replacement of the wash rack would involve demolition of the existing facility and construction of the drive-through. The demolition and construction would be conducted entirely in 2007.

Emissions from demolition and construction are expected to occur as a result of engine exhaust from added vehicles trips of construction workers and offroad construction equipment, including earth-moving equipment and trucks. These emissions would primarily consist of NO_x, particulate matter, CO, and volatile organic compounds (VOC). Emissions of SO₂ from construction are not expected to be significant, because Travis AFB would use low-sulfur-content diesel fuel for the construction equipment.

The demolition and construction emissions of VOCs, NO_x, CO, and PM₁₀ under the Proposed Action were calculated according to the methodology provided in Chapter 9 of the *CEQA Air Quality Handbook* (South Coast Air Quality Management District, 1993), because BAAQMD does not have specific emission factors for construction projects. Emission factors from Table 9-1, for industrial facilities, were used to calculate the new construction emissions. These emission factors include onsite construction equipment and worker travel. Emission factors from Table 9-2 of the *CEQA Air Quality Handbook* were used to calculate the emissions from demolition of the existing wash rack.

The estimated construction emissions are shown in Table 4-1. Detailed construction emission calculations are provided in Appendix C.

TABLE 4-1
Estimated Alternative 2 Construction Emissions
Environmental Assessment for the Replacement of a Vehicle Wash Rack, Travis Air Force Base, California

Activity	Annual Emissions (tpy)			
	VOC	NO _x	CO	PM ₁₀
Demolition (2007)	NA	NA	NA	0.02
Construction (2007)	0.4	5.2	1.1	0.4
Total	0.4	5.2	1.1	0.42

Notes:

NA = not applicable
tpy = tons per year

Operation Emissions. Operation emissions from the Proposed Action would be generated by the new hot water boiler after the new drive-through system is constructed. The emission increases from vehicles would be negligible, because the number of personnel operating the drive-through and the travel distance to the facility are not anticipated to increase from current levels.

The hot water boiler would use natural gas for fuel. The boiler emission factors for VOCs, NO_x, and CO were obtained from Tables 1.4-1 and 1.4-2 of *Supplement D to Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources* (EPA, 1998). It was assumed that the boiler would operate 24 hours per day, 365 days per year. The estimated emissions from the boiler would be 0.05 tpy of VOCs, 0.9 tpy of NO_x, 0.7 tpy of CO, and 0.07 tpy of PM₁₀ during its operation. Detailed boiler emissions calculations are provided in Appendix C.

Emissions Summary. Table 4-2 summarizes the projected total air emissions during demolition, construction, and operation under the Proposed Action.

TABLE 4-2
Estimated Alternative 2 Construction and Operation Emissions
Environmental Assessment for the Replacement of a Vehicle Wash Rack, Travis Air Force Base, California

Emission Type	Annual Emissions (tpy)			
	VOC	NO _x	CO	PM ₁₀
Demolition and Construction (2007)	0.4	5.2	1.1	0.42
Operation (2008 and after)	0.05	0.9	0.7	0.07

4.2.3.2 General Conformity

The CAA established a number of programs and permitting processes designed to protect and improve air quality. Section 176(c) of the CAA Amendment of 1990, 42 USC Section 7506(c), established a conformity requirement for federal agencies, which has been

implemented by 40 CFR 93, Subpart B. A general conformity applicability analysis for the Proposed Action has been performed (see Appendix D) and is summarized here.

The Proposed Action would be located in the Basin in Solano County, which attains or is unclassified for all except the 1-hour and 8-hour ozone NAAQS. For these pollutants, the area is classified as nonattainment (other) and nonattainment (marginal), respectively. The urbanized areas of Solano County (which includes the area occupied by Travis AFB) are maintenance areas for carbon monoxide under the *Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (CARB, 1998). In these areas, the ozone precursor emissions, VOCs and NO_x, and CO are subject to general conformity requirements. In accordance with the air conformity requirements of 40 CFR Sections 51.853 and 93.153(b)(1), the de minimis threshold for such ozone nonattainment areas is 100 tpy per ozone precursor pollutant (VOCs and NO_x), per federal action. The de minimis threshold for a CO maintenance area is 100 tpy per federal action. The annual emission increases associated with the Proposed Action and the comparisons with the de minimis thresholds are shown in Table 4-3. Emissions of VOCs, NO_x, and CO during the construction and the operation of the proposed drive-through are all below the de minimis thresholds of 100 tpy.

TABLE 4-3

Estimated Alternative 2 Total Construction and Operation Emissions
Environmental Assessment for the Replacement of a Vehicle Wash Rack, Travis Air Force Base, California

Activity	Annual Emissions (tpy)		
	VOC	NO _x	CO
Demolition and Construction (2007)	0.4	5.2	1.1
Operation (2008 and after)	0.05	0.9	0.7
De Minimis Threshold	100	100	100

4.2.3.3 Regional Significance

When the total emissions of the nonattainment and maintenance criteria pollutants do not exceed the de minimis limit, the emissions must then be compared to the air quality emissions inventory of the air basin to determine regional significance of the federal action. If the amount of the emissions is greater than 10 percent of the emissions inventory, the federal action is considered regionally significant for that pollutant (40 CFR Part 93, Subpart 153[i]).

Table 4-4 compares the net emissions from the construction and operation of the Proposed Action with the Basin emissions inventory. VOC and NO_x emissions inventory data were obtained from the *San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard* (BAAQMD et al., 2001). CO emissions inventory data were obtained from the *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (CARB, 1998). The potential increase in emissions of VOCs, NO_x, and CO for both construction and operation are below the 10 percent threshold. Therefore, the Proposed Action would not be considered regionally significant.

4.2.3.4 New Source Review

Installation and operation of the boiler would result in less than significant air quality impacts. The new boiler would require installation and operation permits unless its heat input rate is less than 1 million British thermal units per hour (BAAQMD Regulation 2-1-114).

TABLE 4-4

Comparison of Project Emissions and Emissions Inventory

Environmental Assessment for the Replacement of a Vehicle Wash Rack, Travis Air Force Base, California

	VOC	NO _x	CO
Basin Emissions Inventory	162,425	191,625	692,040
Demolition and Construction Emissions (2007)	0.4	5.2	1.1
Percent of Emissions Inventory	0.00022	0.003	0.0002
Basin Emissions Inventory	162,425	191,625	626,340
Operation Emissions (2008 and after)	0.05	0.9	0.7
Percent of Emissions Inventory	0.00003	0.0005	0.0001

Notes:

Emissions are listed in tpy.

Basin emissions inventory data for NO_x and VOCs were obtained from *San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard* (BAAQMD et al., 2001). Emissions inventory data for 2006 were used for emissions comparisons of all years.

Basin emissions inventory data for CO were obtained from *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (CARB, 1998). Emissions inventory data for 2005 were used for the emissions comparison 2007, and data for 2010 were used for the emissions comparison of 2008 and the after.

4.3 Noise

This section describes noise impact criteria and discusses potential project-related noise impacts. Potential future project-related noise impacts were determined by analyzing anticipated changes in noise exposure attributable to the Proposed Action and No Action Alternative at identified noise-sensitive locations. Project-related noise exposure changes would likely result from construction activities under the Proposed Action.

The fundamental measure of sound levels is expressed in dB using a logarithmic scale. Noise is generally defined as sound that is undesirable for the following reasons:

- It is intense enough to damage hearing
- It interferes with speech communication and sleep
- It is annoying

The Federal Interagency Committee on Urban Noise has developed land use compatibility guidelines for noise and provides recommended noise ranges for various land use categories based on this committee's findings. The Air Force has established land use noise compatibility criteria consistent with those published by the Federal Interagency Committee on Urban Noise in its publication, *Guidelines for Considering Noise in Land Use Planning and Control* (1980).

CNEL values of 60 dB and less are generally compatible with all land uses; 60 dB is the incompatibility threshold for residential and other noise-sensitive land uses, including schools, hospitals, and religious facilities. Commercial, industrial, and other types of recreational land uses (e.g., sports arenas, golf courses, amusements parks) are generally considered compatible with annual CNEL ranges between 70 and 75 dB, if measures are incorporated into the design and construction of structures associated with these land uses. Some transportation (e.g., railways, airports) and manufacturing (e.g., mining, nonlivestock agriculture, fishing, and forestry) land uses can tolerate annual CNEL ranges in excess of 85 dB. For comparison, the noise generated by a power lawnmower at 50 feet is 90 dB and the threshold for pain is 120 dB. Figure 4-1 shows some common sounds and their corresponding dB levels.

4.3.1 Alternative 1 – No Action

Implementing Alternative 1 would not result in construction activities. Therefore, no construction noise would occur. Current operational noise levels are not expected to change. The background CNEL for this alternative site is between 70 and 75 dB (Williams, 2005, pers. comm.).

4.3.2 Alternative 2 – Proposed Action

Typical construction-related noise is expressed in terms of schedule, equipment used, and types of activities. The noise level would vary during the construction period, depending on the type of construction activity. Construction can generally be divided into the following five phases, in which different types of construction equipment are used (EPA, 1971; Barnes et al., 1977; Miller et al., 1978):

1. Site preparation and excavation
2. Concrete pouring
3. Steel erection
4. Mechanical
5. Cleanup

The EPA Office of Noise Abatement and Control and the Empire State Electric Energy Research Company extensively studied noise from individual pieces of construction equipment and different types of construction sites (EPA, 1971; Barnes et al., 1977). Use of these data is conservative because, since these studies, public concerns about the adverse effects of noise have resulted in the inclusion of noise control measures in construction equipment design.

The loudest equipment types generally operating at a site during each phase of construction are presented in Table 4-5, in dB. The long-term composite average or equivalent site noise level, representing noise from all equipment, also is presented in the table. The composite levels are occasionally lower than the individual levels because the loudest pieces of equipment would not be operating continuously throughout the construction phase. Pile driving and rock drilling are not currently anticipated, but, if necessary, would be limited in duration and occur only during the day. Table 4-5 shows the noise levels expected 50 feet from the site during construction, according to the types of construction activities that might occur during construction.

Noise naturally dissipates by atmospheric attenuation as it travels through the air. Other factors that can affect the amount of attenuation are ground surface, foliage, topography, and humidity. Each time the distance from a noise source doubles, the level can be expected to decrease by approximately 6 dB.

Noise associated with construction activities would be temporary, occur during daytime hours, and vary in levels, depending on the sources in use and types of activities. Noise associated with flightline activities at the Proposed Action site is approximately 70 to 75 dB CNEL (Williams, 2005, pers. comm.). The closest buildings are Buildings 133 (Motorpool Compound Refueling Station) and 143, both located within 200 feet of the site boundary. These buildings could experience a slight elevation in noise levels during construction activities. The increase in noise from construction of the Proposed Action would be minor and temporary, and any increases are expected to be offset by the noise control measures for ambient background noise that are currently in place at neighboring buildings. Because construction noise would not be substantially higher than background levels, there would be no significant construction noise impacts to the adjacent buildings.

TABLE 4-5

Typical Construction Equipment and Composite Site Noise Levels

Environmental Assessment for the Replacement of a Vehicle Wash Rack, Travis Air Force Base, California

Construction Phase	Loudest Construction Equipment	Equipment Noise Level (dB) at 50 feet	Composite Site Noise Level (dB) at 50 feet
Site Preparation and Excavation	Dump Truck	91	89
	Backhoe	85	
Concrete Pouring	Truck	91	85
	Concrete Mixer	85	
Steel Erection	Derrick Crane	88	89
	Jackhammer	88	
Mechanical	Derrick Crane	88	84
	Pneumatic Tools	86	
Cleanup	Rock Drill	98	79
	Truck	91	

Sources: EPA, 1971; Barnes et al., 1977

Several other buildings are within 400 feet of the site, but noise levels are expected to be at or below background levels by the time they reach these offsite receptors. There are no sensitive receptors within 1,000 feet of the site; therefore, no impacts to that population group are expected from construction noise. Construction activities are not expected to result in significant noise impacts.

After demolition and construction are completed, operational noise levels would increase slightly from existing levels. Noise levels generated by the drive-through could be as high as 89 dB at a distance of 20 feet. The noise levels would be compatible with the land use designation of the Trans yard. Noise increases would be limited to the area surrounding the wash rack and would primarily occur during daylight hours. Noise levels are expected to be at or below background levels by the time they reach any offsite receptors, and there are no sensitive receptors within 1,000 feet of the site. The operators of the drive-through

would follow applicable regulations, including Occupational Safety and Health Act regulations for acceptable noise exposure. Impacts from the increase in noise during operation of the drive-through are expected to be less than significant.

4.4 Hazardous Materials, Wastes, ERP Sites, and Stored Fuels

The U.S. Congress passed RCRA in 1976 to protect both human health and the environment from the mishandling of solid and hazardous waste and to encourage the conservation of natural resources. RCRA requires a system for managing hazardous and universal wastes. Regulations adopted by the EPA in 40 CFR Sections 260 through 279 carry out RCRA's congressional mandate. Regulations in Title 22 of the Code of California Regulations, Article 4.5, closely mirror those contained in the RCRA regulations (URS, 2004).

Travis AFB has procedures in place for handling, recycling, and disposing of wastes, hazardous materials, and fuels. The procedures are detailed in the following guidelines:

- AFI 32-7086, Hazardous Materials Management
- AFI 32-7042, Solid and Hazardous Waste Compliance
- Travis AFB Hazardous Waste Management Plan (Travis AFB, 1999)
- Travis AFB Environmental Flight Policy for Contractors (Travis AFB, 2002b)
- AFI 32-7080, Pollution Prevention Program
- EO 12088, Federal Compliance with Pollution Control Standards
- EO 13101, Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition
- 40 CFR 246.200, The California Integrated Waste Management Act
- Travis AFB Instruction 32-206, Resource, Recovery and Recycling Program (Travis AFB, 2000)

Both project alternatives would comply with these procedures. Both project alternatives would generate waste. However, compliance with waste management procedures would reduce potential impacts to less than significant levels.

4.4.1 Alternative 1 – No Action

Implementation of the No Action Alternative would not result in changes to current waste production or waste management practices.

4.4.2 Alternative 2 – Proposed Action

4.4.2.1 Hazardous Materials

Travis AFB is committed to pollution prevention and uses nonhazardous, environmentally friendly products whenever possible. However, some hazardous materials would be used

at the new drive-through. Implementing the Proposed Action would cause less than significant impacts to hazardous materials use because the amount of hazardous materials used would not increase and hazardous materials would be used in accordance with the Hazardous Materials Management Plan.

4.4.2.2 Wastes

The Proposed Action would involve the demolition and replacement of a vehicle wash rack. The demolition phase of the Proposed Action would generate solid waste, primarily asphalt from pavement removal. Asphalt is a recyclable material. Prior to demolition, a recycling plan would be submitted to CES/CEV to ensure that materials generated during demolition are appropriately recycled, as feasible. The recycling plan would stipulate that after demolition and construction are completed, the amount of material recycled and waste generated would be reported to CES/CEV for inclusion in the Base solid waste inventory. Because the majority of the waste would be recycled, the amount of solid waste generated from replacement of the vehicle wash rack would be less than significant compared to the amount currently generated by the Base.

Lead-based paint (LBP) could have been used on the existing wash rack. An LBP survey would be conducted prior to removal of paint from the existing facility to determine whether it is present. Allowing hazardous waste to come into contact with people or the environment could cause detrimental impacts to human or environmental health. If LBP were present, an abatement plan would be prepared and implemented for its safe abatement. The abatement plan, if needed, would be reviewed and approved by CES/CEV and Bio-Environmental prior to the start of abatement. The abatement plan and any abatement work would be completed in accordance with federal, state, and local regulations and policies. Conducting an LBP survey and implementing an abatement plan (if necessary) would reduce potential impacts from LBP to less than significant levels.

The Proposed Action would not involve any new activities that would generate hazardous waste. The drive-through would be new, but the hazardous waste resulting from treatment of the vehicle-cleaning effluent by the O/WS would continue as under current practices. The drive-through would be equipped with an O/WS that would comply with the Air Force's *Environmental Compliance Policy for Oil/Water Separator Operations, Maintenance and Construction* (1994). The policy stipulates that O/WSs, including associated oil recovery tanks, be designed to have double liners with leak detection. The new O/WS would be maintained at regularly scheduled intervals. Current Base hazardous waste handling and management techniques would be followed. Impacts from vehicle washing are not expected to be different from those associated with current vehicle washing activities; therefore, impacts associated with implementation of Proposed Action would be less than significant.

Solid waste generated during operation of the drive-through would consist of detergent containers, and would be approximately equal to current conditions.

4.4.2.3 ERP Sites

As illustrated on Figure 3-1, the Proposed Action is located within the boundary of ERP Site SS016. Contaminated soil and groundwater have been documented at Site SS016 (Travis AFB, 2002a). Contaminants are not known to occur in the soil or groundwater directly

beneath the Proposed Action site (Radian International, 1998; CH2M HILL, 2003). Construction-related impacts to groundwater are not anticipated because groundwater depths at Travis AFB generally range from 12 to 30 feet below ground surface. Construction is expected to disturb soil to a depth no greater than 6 feet and is not expected to reach groundwater. Prior to construction, the following measures would be implemented:

- Consult with the Base Remediation Program Manager prior to construction.
- Obtain a dig permit (60 AMW Form 55).
- Prepare a contingency plan outlining steps to be taken in case soil discoloration or hydrocarbon vapors were detected or groundwater were encountered during construction. The contingency plan would be reviewed by the Base Remediation Program Manager prior to construction.

If contaminated materials were encountered during construction, protective measures would be implemented based on direction from the Base Remediation Program Manager; therefore, potential impacts to human health and the environment from potential contamination would be less than significant.

Because there are no known contaminants at the Proposed Action site and because appropriate steps would be taken in the unlikely event that contamination were discovered at the site, potential impacts to human health and the environment from the construction of the Proposed Action would be less than significant. Operation of the drive-through would not change from current conditions. Therefore, there would be no impact to the ERP site after demolition and construction are completed.

4.4.2.4 Stored Fuels

Neither the current facility locations nor the Proposed Action site are located on stored fuel locations. Two 20,000 gallon USTs are located south of the Trans wash rack, adjacent to Building 133 and approximately 150 feet from the existing wash rack. One UST stores gasoline and the other stores diesel; both USTs were installed in December 1994 (Travis AFB, 2002a). Because the USTs are not below or immediately adjacent to the current wash rack, impacts to stored fuel locations are not anticipated.

4.5 Water Resources, Floodplains, and Wastewater

Neither project alternatives is located within the 100-year floodplain (Travis AFB, 2002a and 2003; CH2M HILL, 2003). The alternatives would not use groundwater or release water in a way that could impact groundwater. No significant impacts to floodplains or groundwater are expected from either of the project alternatives.

4.5.1 Alternative 1 – No Action

If Alternative 1 were selected, no changes to the stormwater drainage system or waste water generation would occur.

4.5.2 Alternative 2 – Proposed Action

The Alternative 2 site is currently a paved wash rack. No water resources are located on or adjacent to the site (Travis AFB, 2002a and 2003; CH2M HILL, 2003). The Proposed Action site is located in drainage basin IV, as depicted on Figure 3-2.

4.5.2.1 Surface Water

The Trans yard, including the Proposed Action site, is connected to the stormwater drainage system through an underground pipe that conveys stormwater to Union Creek via outflow IV. Construction of the Proposed Action in the Trans yard could produce short-term impacts to the stormwater drainage system from erosion during earth-moving activities. The Base currently has a stormwater permit and a stormwater pollution prevention plan. Stormwater discharges at the Base are regulated under the Travis AFB Industrial Activities Storm Water Discharge Permit (Travis AFB, 2002a). A dig permit (60 AMW Form 55) would be acquired prior to construction. The project would comply with applicable restrictions set forth in the stormwater permit, the stormwater pollution prevention plan, and the dig permit. Best Management Practices would be implemented in accordance with these permits to prevent erosion. Compliance with the relevant permits and implementation of Best Management Practices would reduce potential impacts from construction activities or stormwater discharges to less than significant levels.

4.5.2.2 Wastewater

The Proposed Action would not increase the amount of sewage entering the sanitary sewer system or change conveyance patterns. Water consumption would be reduced using a closed-loop treatment system, which would consist of a series of processing equipment followed by several filtration devices (sand, gravel, anthracite, and cartridge filters). The last device is usually an activated carbon filter for polishing (final cleaning to remove minute quantities of hydrocarbons). The treated water would be stored in a pressurized storage tank. If the pressure in the tank were to drop below a preset level, clean water would be added to supplement the treated water. It is expected that as much as 85 percent of the water used at the drive-through would be recycled water.

The vehicle wash rack would be equipped with an O/WS and rinse water from the wash rack would be conveyed to the sanitary sewer system after passing through the O/WS. The amount of wastewater generated would be less than significant compared to basewide sewer operations.

4.6 Biological Resources – Federal- and State-listed Threatened or Endangered Species

Impacts to biological resources would be significant if species or habitats of concern, including waters of the U.S., were adversely affected over relatively large areas, or if disturbances and impacts could cause reductions in population size or distribution of a species of concern. This section analyzes the potential for adverse impacts to biological resources, such as habitat loss, from implementation of the No Action Alternative and the Proposed Action.

4.6.1 Alternative 1 – No Action

Under the No Action Alternative, the Trans wash rack would not be replaced and current practices would continue. No biological resources are present at or adjacent to the existing wash rack. Therefore, no impacts to biological resources would result from implementation of the No Action Alternative.

4.6.2 Alternative 2 – Proposed Action

The Proposed Action site is currently a paved wash rack. As shown on Figures 2-1 and 3-1, no known wetlands (riparian, vernal pools, or meadows) are located at or near the site (Travis AFB 2002a and 2003; CH2M HILL, 2003). Because biological resources are not present at or adjacent to the existing wash rack, no impacts to biological resources would result from implementation of the Proposed Action.

4.7 Socioeconomic Resources

The socioeconomic conditions of the region could be affected if implementation of the No Action Alternative or the Proposed Action caused changes in the rate of population growth, the demographic characteristics of the Base or Solano County, or employment or economic activity onbase or in the county. This section evaluates potential impacts to socioeconomic resources.

4.7.1 Alternative 1 – No Action

Selection of the No Action Alternative would not result in changes to the socioeconomic resources at the Base or to Solano County.

4.7.2 Alternative 2 – Proposed Action

Implementing the Proposed Action would have a temporary, beneficial impact on socioeconomic resources because it would require a temporary increase of approximately 30 civilian contract employees (construction workers) at the Base. Given the ample supply of construction labor in the region, it is anticipated that construction workers would commute to the work site and would not require temporary housing.

Implementing the Proposed Action would not result in long-term changes to socioeconomic conditions. The personnel who currently operate the vehicle wash rack would operate the drive-through. The Proposed Action would not result in changes to onbase or regional populations.

The expenditure of approximately \$500,000 for the Proposed Action is minor compared to ongoing construction activities in the region, and would have no appreciable effect on the regional economy. However, there would be minor, short-term economic benefits to local convenience businesses from construction workers purchasing meals, gas, and other commodities in the vicinity of the Base. The impacts to socioeconomic conditions from temporary employment would be beneficial, but less than significant compared to the Base or county economies.

4.8 Cultural Resources

The following laws and regulations govern cultural resources management at Travis AFB (Travis AFB, 2003b):

- Antiquities Act of 1906 (16 USC Sections 431 through 433; 34 Stat. 225)
- National Historic Preservation Act of 1966, as amended (16 USC Section 470)
- Native American Graves Protection and Repatriation Act of 1990 (25 USC Sections 3001 through 3013)
- Archaeological Resources Protection Act of 1979 (16 USC Sections 470aa through 47011)
- Archaeological and Historic Data Preservation Act of 1974 (16 USC Sections 469 through 469c)
- American Indian Religious Freedom Act of 1978, amended (42 USC Sections 1996 and 1996a)
- NEPA (42 USC Sections 4321 through 4370c)
- Cultural Resources Management (AFI 32-7065)
- Protection of Historic Properties (36 CFR Section 800)
- National Register of Historic Places (36 CFR Sections 60, 61, 63, and 68)
- World Heritage Convention (36 CFR Section 73)
- Waiver of Federal Agency Responsibilities under Section 110 of the National Historic Preservation Act (36 CFR Section 78)
- Curation of Federally-Owned and Administered Archeological Collections (36 CFR Section 79)
- Preservation of American Antiquities (43 CFR Section 3)
- Protection of Archaeological Resources (43 CFR Section 7)
- Native American Grave Protection and Repatriation Act (43 CFR Section 10)
- Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation
- Legacy Resource Protection Program Act of 1992 (Public Law No. 101-511, Section 8120)
- Protection and Enhancement of the Cultural Environment (EO 11593)
- Accommodation of Sacred Sites (EO 13007)
- Consultation and Coordination with Indian Tribal Governments (EO 13175)

The primary statutes requiring federal agencies to protect cultural resources are the National Historic Preservation Act, EO 11593, the Archaeological and Historic Preservation

Act, and the Archaeological Resources Protection Act (URS, 2004). The Cultural Resource Manager, under the supervision of the Environmental Flight Chief, is responsible for managing natural and cultural resources at Travis AFB.

4.8.1 Alternative 1 – No Action

No cultural resources have been identified at or near the existing Trans wash rack and neither demolition nor construction would take place under the No Action Alternative. Therefore, no impacts to cultural resources would occur under the No Action Alternative.

4.8.2 Alternative 2 – Proposed Action

Archaeological sites, historic buildings, or other culturally sensitive areas are not known to exist at or adjacent to the Proposed Action site. In addition, the site was disturbed during previous construction activities. If unknown cultural or archaeological resources were disturbed during construction, the impact would be considered significant. Therefore, prior to construction, a dig permit (60 AMW Form 55) would be acquired from 60 CES/CEV and a contingency plan would be prepared requiring the following:

- All activities would take place in compliance with the Travis AFB Cultural Resource Management Plan (Travis AFB, 2003b).
- If human remains or archaeological or cultural artifacts were discovered during construction, work would cease and the Cultural Resource Manager would be contacted.

Because no known cultural resources exist at or near the Proposed Action site, no impact to this resource is anticipated from the Proposed Action. If an unexpected cultural resource were encountered, adherence to the dig permit and implementation of the contingency plan would reduce the potential impact to less than significant levels.

4.9 Land Use

This section discusses the potential impacts to land use from the project alternatives. Land use at Travis AFB is described in the Travis AFB General Plan (Travis AFB, 2002a).

4.9.1 Alternative 1 – No Action

Under the No Action Alternative, the wash rack would not be replaced and there would be no change to the existing land use.

4.9.2 Alternative 2 – Proposed Action

According to Travis AFB General Plan land use maps, the existing and future land use designations for the Proposed Action site are industrial. Alternative 2 proposes replacement of an existing wash rack; future use of the site would be identical to current use. Therefore, no impacts to land use would result from implementation of the Proposed Action.

4.10 Transportation System

This section discusses the potential impacts to the transportation system at Travis AFB from implementation of the project alternatives.

4.10.1 Alternative 1 – No Action

Under the No Action Alternative, neither demolition nor construction would occur and existing facilities would continue to be used. Current traffic levels and patterns would be maintained.

4.10.2 Alternative 2 – Proposed Action

Alternative 2 proposes to demolish and construct a wash rack in the central portion of the Base. Demolition and construction activities would add vehicle traffic to Travis AFB. The roadways affected by the construction traffic, including travel by construction workers in their personal vehicles to the construction site, would be the main Base thoroughfares, Air Base Parkway, Cannon Drive, Burgan Boulevard, and Hangar Avenue. According to the Travis AFB General Plan, no significant transportation or parking issues are associated with the roadways that would be used to gain access to the Proposed Action site (Travis AFB, 2002a). Demolition waste and materials needed for construction of the drive-through would be transported using the Base transportation system. Although materials transport would involve truck trips, potential traffic impacts resulting from the proposed construction and demolition would be temporary and minor in comparison to overall Base traffic and, therefore, less than significant.

During operation of the drive-through, the same types and numbers of vehicles would be serviced as at the existing wash rack and, therefore, no impact to the transportation system would occur.

4.11 Airspace/Airfield Operations

4.11.1 Alternative 1 – No Action

No change in airspace/airfield operations would result from selection of the No Action Alternative.

4.11.2 Alternative 2 – Proposed Action

The drive-through would be located outside airspace and airfield operational areas. Neither demolition nor construction would impact airspace or airfield operations areas. Operation of the drive-through would not result in impacts to airspace or airfield operations.

4.12 Safety and Occupation Health

4.12.1 Alternative 1 – No Action

Implementing the No Action Alternative would not change health or safety conditions. Construction would not be required under this alternative; therefore, no changes or impacts to ongoing safety and occupational health practices would occur.

4.12.2 Alternative 2 – Proposed Action

Implementing Alternative 2 would require demolition of the current facility and construction of a new facility, involving both military and civilian personnel. Applicable rules and

regulations regarding safety and occupational health would be followed. A health and safety plan for construction would be prepared that would include requirements, such as shoring for excavations. LBP surveys would be completed prior to construction. If LBP were discovered, an approved abatement plan would be adopted that would stipulate the precautions necessary to protect worker health and safety. Construction areas would be secured as necessary to prevent unauthorized personnel from entering the work sites or excavations.

In accordance with the Occupational Safety and Health Act, all workers would be provided with appropriate personal protective equipment. Personal protective equipment would include, but not be limited to, approved hard hats, safety shoes, gloves, goggles, eye/face protection, safety belts, harnesses, respirators, hearing protection, and traffic safety vests. The potential for adverse impacts to safety and occupational health are expected to be minor and limited to the duration of demolition and construction.

Impacts to public health from operation of the wash rack are not anticipated.

4.13 Environmental Management (Including Geology, Soils, and Pollution Prevention)

Travis AFB has pollution prevention procedures in place that conform to applicable federal, state, and local regulations, including the following:

- AFI 32-7080, Pollution Prevention Program
- EO 12088, Federal Compliance with Pollution Control Standards
- EO 13101, Greening the Government through Waste Prevention, Recycling, and Federal Acquisition
- Travis AFB Instruction 32-206, Resource, Recovery and Recycling Program (Travis AFB, 2000)

The Proposed Action would generate waste and comply with these regulations. Compliance with pollution prevention procedures would reduce potential impacts to less than significant levels.

4.13.1 Alternative 1 – No Action

There would be no change to geology, soils, or pollution prevention if the No Action Alternative were implemented.

4.13.2 Alternative 2 – Proposed Action

No important geological or soil resources are present in the area of the Proposed Action. Construction of Alternative 2 would temporarily disturb soils during demolition and construction. The area that would be disturbed would be approximately 0.5 acre. If needed, excavated areas would be backfilled with clean fill. Therefore, potential impacts to geology or soils associated the Proposed Action would be less than significant.

Generation and management of waste during demolition and construction are expected to meet the pollution prevention goals set in the Travis AFB Pollution Prevention Management Action Plan. See Section 4.4.2 for more information about waste management.

Waste production during operation of the drive-through would be approximately equal to the current levels; therefore, there would be minimal change as a result of implementing the Proposed Action, compared to current conditions.

4.14 Environmental Justice and Protection of Children

4.14.1 Alternative 1 – No Action

Implementation of the No Action Alternative would not affect minority or low-income populations or children.

4.14.2 Alternative 2 – Proposed Action

No minority or low-income populations are present in the vicinity of the Proposed Action site and, therefore, none would be affected by the implementation of the Proposed Action.

Construction sites can be attractive, and therefore dangerous, to children. However, this alternative site is not located near onbase or offbase family housing areas or schools. The nearest family housing and a child development center are located approximately 1 mile northwest of the site. The construction site, excavations, and materials would be properly secured during construction. Therefore, there would be no impacts to children resulting from construction of the drive-through.

Hazardous wastes produced at the site would be handled and disposed of in accordance with applicable regulations and the Base Hazardous Waste Management Plan, and would not pose a disproportionate risk to low-income or minority populations or children.

4.15 Indirect and Cumulative Impacts

Indirect impacts are defined by the CEQ in 40 CFR Section 1508.8 as those “which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.” Indirect impacts may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects to air, water, and other natural systems, including ecosystems.

Indirect impacts of the Proposed Action have been addressed in the preceding resource-specific analyses. Implementing the Proposed Action is not expected to result in significant indirect impacts to environmental or socioeconomic resources. The Proposed Action also would not result in significant growth-inducing effects, induced changes in population, or related effects.

Cumulative impacts are defined by the CEQ in 40 CFR Section 1508.7 as “impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.”

Projects considered in this EA for cumulative impact are those that are ongoing or planned to begin within the next 3 years at Travis AFB. Projects being considered beyond 3 years are too uncertain to be evaluated. The following actions, organized by start date, are the foreseeable future actions that could occur at Travis AFB (URS, 2004):

- **Fiscal Year 2005**
 - Construct C-17 Roads and Utilities (40,000 ft² for roadways)
 - Construct Fire/Crash Rescue Station (30,192 ft²)
 - Construct Coast Guard Facility (103,000 ft²)
 - Construct Security Forces Armory/Combat Arms Campus Facility (18,000 ft²)
- **Fiscal Year 2006**
 - Construct C-17 Maintenance Training Facility, AGE Facility, Nose Dock, Engine Storage Facility, Munitions Maintenance Facility (132,750 ft²)
 - Demolish and replace Water reservoir buildings 1516 and 1520
 - Construct Phase 1 of the Air Mobility Operations Group Center (92,000 ft²)
 - Construct In-flight Kitchen/Fleet Service Facility (23,000 ft²)
 - Replace heating, ventilation, and air conditioning, Building 878
 - Renovate West/Center Island, Building 810 (renovate West Island and Center Island upstairs and downstairs office/work space; upgrade/repair area fire suppression, HVAC, electrical, lighting, lower ceilings; replace doors, bathroom facility, and plumbing; paint as required; update phone and computer line service)
 - Repair 600 Ramp, Spots 605 through 607
 - Paint Shop Floor, Building P-41 (S/M)
 - Repair flooring at Passenger Terminal, Building 3 (replace old and damaged flooring in the following areas of the passenger terminal with Marmoleum®: telephone communications/security monitor room, dispatch office, vehicle control NCO's office, building custodian's office, workers' break room, and all hallways)
 - Repair aircraft hangar floor, Building 809 (R/M) (clean, repair, and paint hangar floor with poly-based paint/nonskid floor coating, paint function lines as required)
 - Install additional lighting, Building 977 (install additional lighting along west side fence line)
 - Demolish the following facilities:
 - Building 235 (Audio Visual)
 - Building 238 (Reserve Forces Operational Training)
 - Building 242 (Squadron Operations)
 - Building 572 (Warehouse)
 - Building 690 (Thrift Shop)
 - Building 755 (Shop Aircraft General Purpose)

- Building 828 (Security Forces, Control)
- Building 943 (Security Forces, Operations)
- **Fiscal Year 2007**
 - Demolish Building 882 (Civil Engineering Maintenance Shop)
 - Demolish and replace water reservoir Building 1518
 - Construct Phases 2 and 3 of the Air Mobility Operations Group Center (610,000 ft²)
 - Renovate aircraft hangar, Building 808 (R/M)
 - Repair hangar floor, Building 808 (paint hangar floor with nonskid materials and finish with gloss coat)
 - Remove water filter system (remove water filter recycle system from floor system rerouted to the sanitary sewer system; may require an oil-water separator)
 - Construct C-17 two-bay hangar, addition/alteration to Composite Shop, Wheel and Tire Shop, taxiway repairs (719,730 ft²)
 - Construct Passenger Terminal (94,519 ft²)

Alternative 1, the No Action Alternative, would have no potential for cumulative impacts. Potential cumulative impacts to the resource areas from the Proposed Action are discussed below.

The potential for cumulative impacts attributable to air quality would be from multiple construction projects occurring simultaneously. Not all of the actions listed above would be constructed simultaneously. The Proposed Action would conform to the SIP and not be regionally significant. Each project would implement measures that reduce emissions to less than significant levels. Provided that the projects are not constructed simultaneously, the SIP measures for each project would be sufficient to prevent significant cumulative impacts from construction activities. The Proposed Action would occur during fiscal year 2007 and take approximately 1 year to complete. Demolition would occur during the first month of implementation.

As discussed in Section 4.5, the Proposed Action could result in impacts to water resources during construction. Earth-moving activities associated with multiple construction projects occurring simultaneously could affect water resources by decreasing the quality of surface water runoff during storm events. Travis AFB currently has a basewide stormwater permit and a basewide stormwater pollution prevention plan. Impacts from multiple actions would be addressed and reduced to less than significant levels by adhering to the basewide permits and programs that are currently in place.

As noted in Section 3.5, both the stormwater drainage system and the sanitary sewer system are inadequate for current Base needs. Future actions would put additional strain on both systems. The Base has conducted studies to define system deficiencies and is developing remedial measures. The design of any future sewer and stormwater upgrades would account for current and future needs. The Proposed Action would not put further strain on the stormwater or sanitary sewer systems; therefore, there would be no cumulative impacts to those systems.

4.16 Unavoidable Adverse Impacts

No significant unavoidable adverse impacts are expected from the construction or operation of the drive-through under the Proposed Action Alternative. Any impacts resulting from demolition and construction are expected to be less than significant and short in duration.

4.17 Relationship between Short-term Uses and Enhancement of Long-term Productivity

The Proposed Action would meet the Base's need to provide an environmentally compliant area to wash and maintain the exteriors of 400 to 500 Base fleet and Trans vehicles. Currently, Trans personnel manually wash the vehicles at the existing wash rack. This practice is inefficient. Additionally, an internal Air Force assessment identified the current facility design as deficient because it allows stormwater infiltration into the sanitary sewer system during storm events. The Proposed Action would enhance long-term productivity at Travis AFB by resolving the deficiencies associated with the existing wash rack.

4.18 Irreversible and Irretrievable Commitment of Resources

Resources expected to be affected during the long-term use of the drive-through include additional electricity for lighting and natural gas for heating. The current main electrical system is anticipated to have sufficient capacity to accommodate the expected increases in load. The following electrical loads are expected for the drive-through and its utility requirements:

- Lighting – 7,500 watts
- Power – 40,000 watts
- Heat Input (gas consumption) – 2,000 cubic feet per hour

Figure
4-1 Comparative Sound Levels
(8.5 x 11, B&W)

SECTION 5.0

List of Preparers

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SECTION 6.0

List of Agencies and People Consulted and/or Provided Copies

The following people were consulted during preparation of this EA:

- Captain Jeremiah Frost, CES/CEV
- Robert Holmes, CES/CEV
- Rodolfo Pontemayor, CES/CEV
- Wayne Williams, CES/CEV, Chief, Environmental Flight

Travis AFB will coordinate distribution of this EA to the following public and regulatory agencies:

- **Federal**
 - U.S. Environmental Protection Agency, Region 9
Director, Office of Federal Activities
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 - U.S. Department of the Interior
U.S. Fish and Wildlife Service
CA/NV Operations Office
2800 Cottage Way, Room W-2606
Sacramento, California 95825
- **State**
 - State of California Clearinghouse
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SECTION 7.0

Works Cited

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Appendix A
Air Force Form 813

Appendix B
Air Force Form 332

Appendix C
Air Emission Calculations

Air Emission Calculations

C.1 Estimation of Demolition Emissions

The existing wash rack would be demolished before construction begins for the new drive-through system. Demolition would involve removing the concrete paving of the existing facility. The total volume of demolition materials was estimated by multiplying the 0.5 acre of disturbed area by 5 feet. Although the concrete is not expected to be 5 feet deep, this figure was used to calculate a conservative estimate.

Fugitive dust (PM₁₀) is the primary emission type associated with demolition. The PM₁₀ demolition emission factor was obtained from Table 9-2 of the CEQA Air Quality Handbook (South Coast Air Quality Management District, 1993). Demolition emissions were calculated by multiplying the emission factors by the cubic footage expected to be demolished each day and the number of days needed for demolition. The emission factors and the emissions from demolition of the existing facility are shown in Table C-1.

TABLE C-1

Estimated Emissions during Demolition of the Existing Wash Rack
Environmental Assessment for the Replacement of a Vehicle Wash Rack, Travis Air Force Base, California – Air Emission Calculations

Year	Demolition Volume (ft ³ /day)	Demolition Duration (days)	PM ₁₀ Emission Factor (lb/ft ³ /day)	Total PM ₁₀ Emissions (tpy)
2007	3630	30	0.00042	0.02

Notes:

Demolition emission factors were obtained from Table 9-2 of the South Coast Air Quality Management District CEQA Handbook (1993).

ft³/day = cubic feet per day

lb/ft³/day = pounds per cubic foot, per day

tpy = tons per year

C.2 Estimation of Construction Emissions

The construction emission factors of VOCs, NO_x, CO, and PM₁₀ were obtained from Table 9-1 of the CEQA Air Quality Handbook (South Coast Air Quality Management District, 1993). These emission factors were established based on regional averages, including onsite construction equipment and workers' travel. The emission factors for industrial facilities were used in the calculations. Total emissions in 2007 were calculated by multiplying the emission factors by the total square footage of the proposed construction. The emission factors and calculated emissions are shown in Table C-2.

TABLE C2

Estimated Emissions during Construction of the New Wash Rack
*Environmental Assessment for the Replacement of a Vehicle Wash Rack, Travis Air Force Base, California –
 Air Emission Calculations*

	Unit	VOC	NO _x	CO	PM ₁₀
Emission Factor	(lb/construction period/ 1,000 ft ²)	32.79	481.88	104.79	34.22
Construction 2007	tpy	0.4	5.2	1.1	0.4

Notes:

Construction emission factors were obtained from Table 9-1 of the South Coast Air Quality Management District CEQA Handbook (1993).

lb/construction period/1,000 ft² = pounds per construction period, per 1,000 square feet

Assumption:

Square footage of Building Construction: 21,780

C.3 Estimation of Operation Emissions

Operation emissions from the new drive-through system would be generated by the new hot water boiler. Table C-4 shows the emission factors and the total emissions of NO_x, VOCs, CO, and PM₁₀ from operation of the new natural gas boiler. The emission factors of NO_x and CO were obtained from Table 1.4-1 of Chapter 1 in *Supplement D of Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources*, (U.S. Environmental Protection Agency, 1998). The emission factors for uncontrolled emissions from small boilers of less than 100 million British thermal units per hour (MMBtu/hr) were used in the calculations. The emission factors of VOCs and PM₁₀ were obtained from Table 1.4-2 of Supplement D, assuming all the particulate matter emissions would be PM₁₀. The annual emissions from the new boiler were calculated by multiplying the emission factors (lb/MMSCF) by the estimated fuel usage (MMSCF/hr) and the total operating hours per year. The emission factors and calculated emissions are shown in Table C-3.

TABLE C-3

Hot Water Boiler Emission Calculations
*Environmental Assessment for the Replacement of a Vehicle Wash Rack, Travis Air Force Base, California –
 Air Emission Calculations*

	Unit	VOC	NO _x	CO	PM ₁₀
Emission Factors	lb/MMSCF	5.5	100	84	7.6
Operation Emissions (2008 and after)	tpy	0.005	0.09	0.07	0.007

Notes:

Emission factors for the boiler obtained from Chapter 1, Tables 1.4-1 and 1.4-2, *Supplement D of Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources* (U.S. Environmental Protection Agency, 1998)

New Boiler Fuel Usage (MMSCF/hr): 0.0002

Operating hours per year: 8,760

C.4 Works Cited

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Appendix D
Clean Air Act Conformity Applicability Analysis
for the Replacement of a Vehicle Wash Rack

Clean Air Act Conformity Applicability Analysis for the Replacement of a Vehicle Wash Rack

D.1 Purpose

The U.S. Air Force is required to perform an air conformity applicability analysis to determine whether the Proposed Project, replacement of a vehicle wash rack at Travis Air Force Base (AFB), California, will comply with the U.S. Environmental Protection Agency's (EPA) Final Conformity Rule, 40 Code of Federal Regulations (CFR) 93, Subpart B (for federal agencies), and 40 CFR 51, Subpart W (for state requirements), of the amended Clean Air Act (CAA).

D.2 Background

EPA has issued regulations clarifying the applicability and procedures for ensuring that federal activities comply with the amended CAA. The EPA Final Conformity Rule implements Section 176(c) of the CAA, as amended in 42 U.S. Code 7506(c). This rule was published in the Federal Register on November 30, 1993, and took effect on January 31, 1994.

The EPA Final Conformity Rule requires all federal agencies to ensure that any federal action resulting in nonattainment criteria pollutant emissions conforms with an approved or promulgated state implementation plan (SIP) or federal implementation plan. Conformity means compliance with a SIP's or federal implementation plan's purpose of attaining or maintaining the National Ambient Air Quality Standards (NAAQS). Specifically, this means ensuring that the federal action will not (1) cause a new violation of the NAAQS; (2) contribute to any increase in the frequency or severity of violations of existing NAAQS; or (3) delay the timely attainment of any NAAQS interim or other attainment milestones. NAAQS are established for seven criteria pollutants, as follows:

- Ozone (O₃)
- Carbon monoxide (CO)
- Particulate matter equal to or less than 10 microns in diameter (PM₁₀)
- Particulate matter equal to or less than 2.5 microns in diameter (PM_{2.5})
- Nitrogen dioxide (NO₂)
- Sulfur dioxide (SO₂)
- Lead (Pb)

The current standards apply only to federal actions in NAAQS nonattainment or maintenance areas.

D.3 Summary of Air Pollutant Emissions and Regulatory Standards

The Proposed Project would be implemented in Solano County, California, which is designated nonattainment (other) for the 1-hour O₃ and nonattainment (marginal) for 8-hour O₃. The county is in attainment for all other criteria pollutants. In addition, the urbanized areas of Solano County, which include the area occupied by Travis AFB, are maintenance areas for CO under the *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (California Air Resources Board [CARB], 1998). General conformity is being addressed for the Proposed Action. Air quality management in Solano County is under the jurisdiction of CARB, the Bay Area Air Quality Management District (BAAQMD), and EPA Region 9. The applicable General Conformity regulation is 58 FR 63214 (November 30, 1993).

The EPA Final Conformity Rule requires that total direct and indirect emissions of non-attainment and maintenance criteria pollutants, including O₃ precursors (volatile organic compounds [VOCs] and nitrogen oxides [NO_x]), be considered in determining conformity. The rule does not apply to actions where the total direct and indirect emission of non-attainment and maintenance criteria pollutants do not exceed threshold levels for criteria pollutants established in 40 CFR 93.135(b). Consequently, the applicable de minimis levels for the Proposed Project are 100 tons per year (tpy) for emissions of O₃ precursors (VOCs and NO_x), and 100 tpy for emissions of CO. Tables D1 and D2 present the de minimis threshold levels of nonattainment and maintenance areas, respectively.

TABLE D-1

De Minimis Thresholds in Nonattainment Areas

Environmental Assessment for the Replacement of a Vehicle Wash Rack, Travis Air Force Base, California – Clean Air Act Conformity Applicability Analysis for the Replacement of a Vehicle Wash Rack

Pollutant	Degree of Nonattainment	De Minimis Threshold ^a
O ₃ (VOCs and NO _x)	Serious	50
	Severe	25
	Extreme	10
	Other ozone – outside an O ₃ transport region	100
O ₃ (VOCs)	Marginal and moderate – inside an O ₃ transport region	50
O ₃ (NO _x)	Marginal and moderate – inside an O ₃ transport region	100
CO	All	100
PM ₁₀	Moderate	100
	Serious	70
SO ₂ or NO ₂	All	100
Pb	All	25

^aDe minimis thresholds are listed in tpy. The bold number reflects the de minimis threshold used in this analysis.

Source: 40 CFR 93.135(b)

TABLE D-2

De Minimis Thresholds in Maintenance Areas

Environmental Assessment for the Replacement of a Vehicle Wash Rack, Travis Air Force Base, California – Clean Air Act Conformity Applicability Analysis for the Replacement of a Vehicle Wash Rack

Pollutant	Maintenance Area	De Minimis Threshold ^a
O ₃ (NO _x)	All	100
O ₃ (VOCs)	Inside an O ₃ transport region	50
	Outside an O ₃ transport region	100
CO	All	100
PM ₁₀	All	100
SO ₂ or NO ₂	All	100
Pb	All	25

^aDe minimis thresholds are listed in tpy. The bold number reflects the de minimis threshold used in this analysis.

Source: 40 CFR 93.135(b)

In addition to meeting de minimis requirements, a federal action must not be considered a regionally significant action. A federal action is considered regionally significant when the total emissions from the action equal or exceed 10 percent of the air quality control area's emissions budget for the applicable pollutant. If a federal action meets de minimis requirements and is not considered a regionally significant action, it is exempt from further conformity analyses, pursuant to 40 CFR 93.153(c).

D.4 Emission Calculations

D.4.1 Construction Emissions

Replacement of the wash rack would involve demolition of the existing facility and construction of the new drive-through system. The demolition and construction would be conducted entirely in 2007. Construction emissions are expected to occur as a result of engine exhaust from added vehicles trips of construction workers and offroad construction equipment, including earth-moving equipment and trucks. These emissions would primarily consist of NO_x, SO₂, particulate matter, CO, and VOCs. Because the project is only subject to general conformity requirements for NO_x, VOCs, and CO, the emissions of SO₂ and particulate matter are not discussed in this applicability analysis.

The construction emissions for VOCs, NO_x, and CO were calculated according to the methodology provided in Chapter 9 of the *CEQA Air Quality Handbook* (South Coast Air Quality Management District, 1993), because BAAQMD does not have specific emission factors for construction projects. Emission factors from Table 9-1, for industrial facilities, were used. These emission factors include onsite construction equipment and worker travel.

The estimated demolition and construction emissions for 2007 are shown in Table D-3. Detailed construction emission calculations are provided in Appendix C.

TABLE D-3

Estimated Emissions during Construction of the Proposed Action
Environmental Assessment for the Replacement of a Vehicle Wash Rack, Travis Air Force Base, California – Clean Air Act Conformity Applicability Analysis for the Replacement of a Vehicle Wash Rack

Activity	Annual Emissions (tpy)			
	VOCs	NO _x	CO	PM ₁₀
Demolition	NA	NA	NA	0.02
Construction	0.4	5.2	1.1	0.4
Total	0.4	5.2	1.1	0.4

Note:

NA = not applicable

D.4.2 Operation Emissions

Operation emissions from the Proposed Action would be generated by the new hot water boiler. The emission increases from vehicles would be negligible, because the number of personnel operating the drive-through system and the travel distance to the facility are not anticipated to increase from current levels.

The hot water boiler would use natural gas for fuel. The boiler emission factors for VOCs, NO_x, and CO were obtained from Tables 1.4-1 and 1.4-2 of *Supplement D to Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources* (EPA, 1998). It was assumed that the boiler would operate 24 hours per day, 365 days per year. The estimated emissions from the boiler would be 0.05 tpy of VOCs, 0.9 tpy of NO_x, 0.7 tpy of CO, and 0.07 tpy of PM₁₀ during operation. Detailed boiler emissions calculations are provided in Appendix C.

D.4.3 Emissions Summary and Comparison to De Minimis Levels

Table D-4 summarizes the projected total air emissions during construction and operation of the Proposed Action and compares the emissions with the de minimis thresholds.

Emissions of VOCs, NO_x, and CO during construction and operation of the Proposed Action are below the de minimis thresholds of 100 tpy.

TABLE D-4

Estimated Total Emissions and Comparisons with De Minimis Thresholds
Environmental Assessment for the Replacement of a Vehicle Wash Rack, Travis Air Force Base, California – Clean Air Act Conformity Applicability Analysis for the Replacement of a Vehicle Wash Rack

	Annual Emissions (tpy)		
	VOC	NO _x	CO
Demolition and Construction (2007)	0.4	5.2	1.1
Operation (2008 and after)	0.05	0.9	0.7
De Minimis Threshold	100	100	100

D.4.4 Regional Significance

When the total emissions of the nonattainment and maintenance criteria pollutants do not exceed the de minimis limit, the emissions must then be compared to the air quality emissions inventory of the air basin to determine regional significance of the federal action. If the amount of the emissions is greater than 10 percent of the emission inventory, the federal action is considered regionally significant for that pollutant (40 CFR Part 93, Subpart 153[i]).

Table D-5 compares the net emissions from the construction and operation of the Proposed Action with the San Francisco Bay Area Air Basin (Basin) emissions inventory. NO_x and VOC emissions inventory data were obtained from the *San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard* (BAAQMD et al., 2001). CO emission inventory data were obtained from the *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (CARB, 1998). The potential increase in emissions of VOCs, NO_x, and CO for both the constructions and operation are below the 10 percent threshold. Therefore, the proposed project is not considered regionally significant.

TABLE D-5

Comparison of Project Emissions and Emissions Inventory
Environmental Assessment for the Replacement of a Vehicle Wash Rack, Travis Air Force Base, California – Clean Air Act Conformity Applicability Analysis for the Replacement of a Vehicle Wash Rack

	VOC	NO _x	CO
Basin Emissions Inventory	162,425	191,625	692,040
Demolition and Construction Emissions (2007)	0.4	5.2	1.1
Percent of Emissions Inventory	0.00022	0.003	0.0002
Basin Emissions Inventory	162,425	191,625	626,340
Operation Emissions (2008 and after)	0.05	0.9	0.7
Percent of Emissions Inventory	0.00003	0.0005	0.0001

Notes:

Emissions data, except percentages, are listed in tpy.

Basin emissions inventory data for VOCs and NO_x were obtained from *San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard* (BAAQMD et al., 2001). Emissions inventory data for 2006 were used for emissions comparisons for all years.

Basin emissions inventory data for CO were obtained from *Final Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas* (CARB, 1998). Emissions inventory data for 2005 were used for the emissions comparison of 2007, and data for 2010 were used for 2008 and after.

D.4.5 Conclusion

The emissions calculated for each calendar year are below the de minimis level for each of the pollutants analyzed. In addition, the emissions of CO and ozone precursors would not exceed 10 percent of the total Bay Area Air Basin emission inventories listed in the SIP. On the basis of the conformity applicability criteria, the Proposed Action conforms to the most recent EPA-approved SIP; therefore, the Proposed Action is exempt from the CAA conformity requirements and does not require a detailed conformity demonstration.

D.5 Works Cited

Bay Area Air Quality Management District (BAAQMD), Association of Bay Area Governments, and Metropolitan Transportation Commission. 2001. *San Francisco Bay Area Ozone Attainment Plan for the 1-hour National Ozone Standard*. October.

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