Hill Air Force Base, Utah

Environmental Assessment

309th CMXG/MXCD Landing Gear Remanufacturing Squadron Lean Transformation Project

Buildings 505, 507, and 511

March 2007

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14. ABSTRACT

The 309th CMXG/MXCD Landing Gear Repair Squadron is currently operating with less than optimal equipment, facilities, and manufacturing methodologies. The current methods of production are batch-and-queue in nature, task-oriented, and functionally isolated. Current production systems are designed and centered on types of processes performed in each area, resulting in excessive travel time and distance between components through the facility. Most of the industrial processing equipment is aging and at the point of needing to be refurbished or replaced. Existing equipment is prone to long downtimes due to long lead supply times, out-of-business vendors, and obsolete parts. Hill AFB requires a facility that would accommodate an increased workload capacity and effectively adapt to changes in the workload mix. The addition of modernized equipment and lean manufacturing techniques would allow for quality to be maintained at the manufacturing cell level, thereby producing high-quality, repaired end items efficiently and dependably. The Proposed Action also provides the benefit of increasing workload capabilities.

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Hill Air Force Base, Utah

Environmental Assessment for 309th CMXG/MXCD Landing Gear Remanufacturing Squadron Lean Transformation Project – Buildings 505, 507, and 511

Prepared for:

75 CEG/CEVR
Environmental Management Division
Civil Engineer Group

and

Select Engineering Services, Inc.

PRIVACY ADVISORY

In order to protect the privacy of people who are participating in the environmental assessment process, no names of members of the public have been included in this environmental assessment. Only the names of those personnel who are working in an official capacity for the Air Force or some other federal or state agency have been included in this document.

Prepared by:

CH2MHILL
215 South State, Suite 1000
Salt Lake City, Utah 84111

MARCH 2007

How to Read This Environmental Assessment

Following federal regulations, this Environmental Assessment (EA) has been designed and written to (1) provide the Air Force with sufficient information to make informed, reasoned decisions concerning 309th Landing Gear Repair Lean Transformation in Buildings 505, 507, and 511, and (2) inform members of the affected and interested public of this project so they may express their opinions to the Air Force.

This document has been developed and organized to provide the reader with sufficient information to understand the issues to be addressed, the environment in which these issues arise, and the social and environmental consequences of these actions. The chapters are written so that non-technical readers can understand the potential environmental consequences of each of the alternatives.

The document is organized as follows:

- **Chapter 1 — Purpose of and Need for the Proposed Action.** This chapter introduces the Proposed Action and describes the purpose and need for the EA. This chapter provides a brief description of alternative selection objectives and criteria. In addition, relevant plans, environmental impact statements, EAs, laws, regulations, permits, licenses, and other consultation requirements are identified.
- **Chapter 2 — Alternatives Including the Proposed Action.** This chapter includes a description and evaluation of Alternative A: No Action; Alternative B: Proposed Action; Alternative C: Relocation to Another Area of Hill Air Force Base (AFB); and Alternative D: Relocation to Another Air Force Base.
- **Chapter 3 — Affected Environment.** This chapter describes the subject area's existing conditions and environmental resources that could be affected by the alternatives.
- **Chapter 4 — Environmental Consequences.** This chapter contains the basis for the comparison of the environmental consequences of each of the alternatives.
- **Chapter 5 — List of Preparers.** This chapter lists all the preparers and their responsibilities.
- **Chapter 6 — References.** References used in preparation of this EA are included in this chapter.
- **Chapter 7 — List of Agencies and Persons Contacted.** This chapter contains a list of agencies and persons contacted during the preparation of this EA, including the topic of consultation and date contacted.

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Cover Sheet

Environmental Assessment for
309th CMXG Lean Transformation Project – Buildings 505, 507, and 511
at Hill Air Force Base, Utah

Responsible Agency: Jim Diamond (801) 775-4460, 309th Commodities Maintenance Group CMXG/MXCD Landing Gear Repair Squadron, Hill AFB, Utah.

Affected Location: Hill AFB, Davis County, Utah.

Proposed Action: Develop and implement a lean/cellular concept for production operations in Buildings 505, 507, and 511 to efficiently remanufacture United States Air Force landing gear parts and components.

Written comments and inquiries regarding this document should be directed to:
Kay Winn, 75 CEG/CEVOR, 7274 Wardleigh Road, Building 5, Hill Air Force Base, Utah, 84056.

Report Designation: Environmental Assessment.

Abstract: The 309th CMXG/MXCD Landing Gear Repair Squadron is currently operating with less than optimal equipment, facilities, and manufacturing methodologies. The current methods of production are batch-and-queue in nature, task-oriented, and functionally isolated. Current production systems are designed and centered on types of processes performed in each area, resulting in excessive travel time and distance between components through the facility. Most of the industrial processing equipment is aging and at the point of needing to be refurbished or replaced. Existing equipment is prone to long downtimes due to long lead supply times, out-of-business vendors, and obsolete parts. Hill AFB requires a facility that would accommodate an increased workload capacity and effectively adapt to changes in the workload mix. The addition of modernized equipment and lean manufacturing techniques would allow for quality to be maintained at the manufacturing cell level, thereby producing high-quality, repaired end items efficiently and dependably. The Proposed Action also provides the benefit of increasing workload capabilities.

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Finding of No Significant Impact

Project Name

309th CMXG Lean Transformation Project – Buildings 505, 507, and 511.

Description of Proposed Action

The project involves developing and implementing a lean/cellular concept for landing gear production operations in Buildings 505, 507, and 511. Renovations include procuring equipment, refurbishing existing equipment, relocating equipment, and modifying process flows and part routing. Lean methodologies will improve processes and meet or exceed current and forecast production requirements for the Landing Gear remanufacturing facility.

Selection Criteria

The following selection criteria were established for use in evaluation of the proposed alternatives:

- Increased workload efficiency
- Ongoing Landing Gear remanufacturing mission accomplishment
- No significant impact to human health or the environment

Additional Alternatives

Alterative A: No Action. Under the No-Action Alternative, Hill AFB would continue utilizing inadequate facilities. The current working conditions are substandard and adversely affect the morale and well-being of assigned military, civilian, and contractor personnel. The organization of the resulting facility is inefficient because the flow of the parts through the facility is disorganized and wasteful.

Alternative C: Relocation to Another Area of Hill AFB. Alternative C involves relocating the landing gear maintenance and new manufacturing operations to another area of Hill AFB. This alternative would involve construction of an entirely new facility or extensive renovation of an existing structure.

Alternative D: Relocation to Another Air Force Base. Alternative D involves relocating the landing gear maintenance and new manufacturing operations to another Air Force base. This alternative would involve identifying a location for workload performance at another Air Force Materiel Command base.

Impact on Resources

Based on the evaluation of environmental consequences in the EA, the Proposed Action would not cause any significant negative environmental effects. Furthermore, air, water, and soil resources would not be negatively impacted by the Proposed Action.

Due to current and future land use of Hill AFB, the No-Action Alternative would have no change in its impact on the current environment.

Conclusion

The findings of this Environmental Assessment indicate that the Proposed Action to use lean methodologies to improve processes and to meet or exceed current and forecast production requirements for the Landing Gear remanufacturing facility will not have significant adverse effects on human health or any of the environmental resources as described in the Environmental Assessment. Therefore, **issuance of a Finding of No Significant Impact is justified, and an Environmental Impact Statement is not required.**

HARRY BRIESMASTER III, Colonel, USAF
Commander

Date

Executive Summary

Purpose and Need

The landing gear remanufacturing squadron is currently operating with less than optimal equipment, facilities, and manufacturing methodologies. The current methods of production are batch-and-queue in nature, task-oriented, and functionally isolated. Current production systems are designed and centered on types of processes performed in each area, resulting in excessive travel time and distance between components through the facility. Most of the industrial processing equipment is aging and at the point of needing to be refurbished or replaced. Existing equipment is prone to long downtimes due to long lead supply times, out-of-business vendors, and obsolete parts. Hill AFB requires a facility that would accommodate an increased workload capacity and effectively adapt to changes in the workload mix.

Selection Criteria and Alternatives Considered

The following objectives were established for use in evaluation of the proposed alternatives:

- Objective 1: Increase workload efficiency
- Objective 2: Ensure ongoing Landing Gear remanufacturing facility mission accomplishment
- Objective 3: Ensure no significant impact to human health or the environment

The selected alternative must accomplish each of these objectives.

In an effort to meet current and future workload requirements, four alternatives were evaluated:

- **Alterative A: No Action**. Continue use of existing landing gear maintenance and new manufacturing facilities as presently configured.
- **Alternative B: Proposed Action**. Develop and implement a lean/cellular concept for production operation in Buildings 505, 507, and 511 to improve depot maintenance operations.
- **Alternative C: Relocation to Another Area of Hill AFB**. Relocate landing gear remanufacturing operations to another area of Hill AFB.
- **Alternative D: Relocation to Another Air Force Base.** Relocate landing gear remanufacturing operations to another Air Force base.

Impact on Resources

The evaluation of environmental consequences in the EA demonstrates and documents that the Proposed Action would not cause any significant negative environmental effects. Furthermore, air, water, and soil resources would not be negatively impacted by the Proposed Action.

Due to current and future land use at Hill AFB, the No-Action Alternative would have virtually no change in its impact on the current environment. It would cause more outsourcing of work, either as workload increases because the existing facility cannot handle the added capacity or as new weapon systems come in for repair because the existing facility cannot accommodate their repair without significant renovation.

Conclusion

The findings of this EA indicate that the Proposed Action to use lean methodologies to improve processes and to meet or exceed current and forecast production requirements for the Landing Gear and New Manufacturing maintenance plants will not have significant adverse effects on human health or any of the environmental resources as described in the EA. Only the Proposed Action would satisfy the objectives and selection criteria and meets the purpose and need of the Air Force.

Contents

Tables

Figures

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Acronyms

AFB	Air Force Base
AFOSH	Air Force Occupational and Environmental Safety, Fire Protection, and Health Program
AICUZ	Air Installation Compatible Use Zone
CAA	Clean Air Act
CFR	Code of Federal Regulations
dB	Decibel
EA	Environmental Assessment
HVOF	High-Velocity Oxygenated Fuel
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act
NO_x	Oxides of Nitrogen
PM_{10}	Particulate Matter Less than 10 Microns in Diameter
SIP	State Implementation Plan
VOC	Volatile Organic Compounds

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1.0 Purpose of and Need for Action

1.1 Proposed Action

1.1.0.1 The Landing Gear Repair Squadron proposes implementing lean manufacturing processes in Buildings 505, 507, and 511 at Hill Air Force Base (AFB) to perform the increased workload more efficiently and address any future increase in workload. The transformation will be accomplished through improving process flow, increasing availability of critical skills, reducing waste, upgrading or purchasing new equipment, and making facility repairs. Process renovation is scheduled to begin in March 2007.

1.1.0.2 Hill AFB is located in northern Utah, approximately 25 miles north of Salt Lake City and 5 miles south of Ogden, as shown in Figure 1-1. Hill AFB occupies approximately 6,700 acres in Davis and Weber counties. The western boundary of the Base is formed by Interstate 15, and the southern boundary is State Route 193. The privately owned Davis-Weber irrigation canal bounds the northern and northeastern perimeters, and the southeastern boundary borders a municipal incineration facility and open farmland adjacent to private residences.

1.1.0.3 The Landing Gear Remanufacturing Facility (Buildings 505, 507, and 511) is located in the East Industrial Area of Hill AFB, about one-half mile north of the South Gate (see Figure 1-2).

1.2 Need for the Action

1.2.0.1 The 309th Landing Gear Remanufacturing Squadron is currently operating with less than optimal equipment, facilities, and manufacturing methodologies. The current methods of production are batch-and-queue in nature, task-oriented, and functionally isolated. Current production systems are designed and centered on types of processes performed in each area, resulting in excessive travel time and distance between components through the facility. Most of the industrial processing equipment is aging and at the point of needing to be refurbished or replaced. Existing equipment is prone to long downtimes due to long lead supply times, out-of-business vendors, and obsolete parts. Hill AFB requires a facility that would accommodate an increased workload capacity and effectively adapt to changes in the workload mix. The addition of modernized equipment and lean manufacturing techniques would allow for quality to be maintained at the manufacturing cell level, thereby producing high-quality, repaired end items dependably. The Proposed Action also provides the benefit of increasing workload capabilities.

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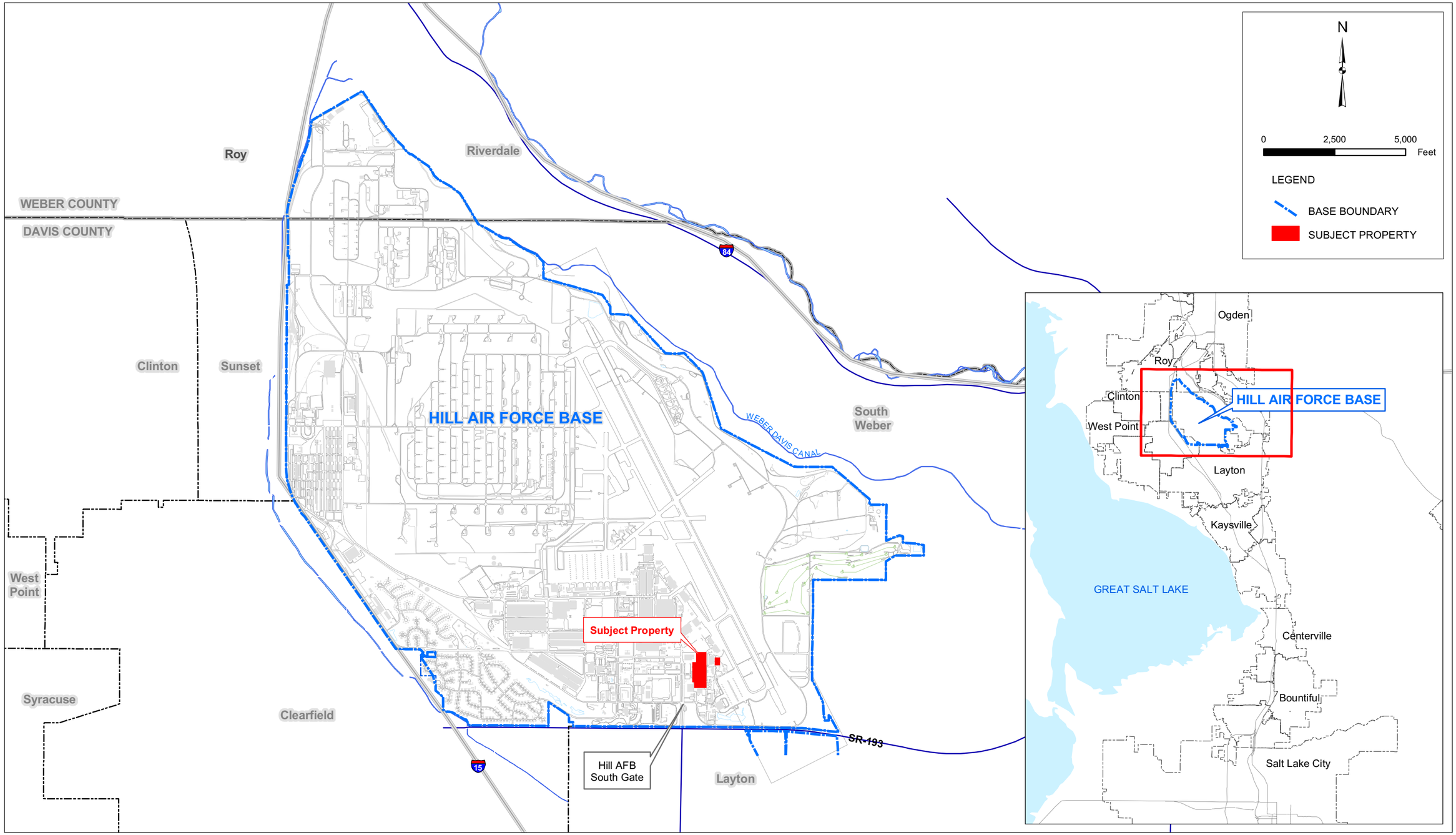

FIGURE 1-1

LOCATION MAP

HILL AIR FORCE BASE, UTAH

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FIGURE 1-2

SUBJECT PROPERTY

HILL AIR FORCE BASE, UTAH

1.3 Objectives of the Action

1.3.0.1 Based on needs described in the preceding sections, the following objectives were established for use in evaluation of the proposed alternatives:

- Objective 1: Increase workload efficiency
- Objective 2: Ensure ongoing Landing Gear Remanufacturing mission accomplishment
- Objective 3: Ensure no significant impact to human health or the environment

The selected alternative must accomplish each of these objectives.

1.4 Alternative Selection Criteria

1.4.0.1 A summary comparison of each action against these objectives is presented in Table 1-1. Each alternative has been evaluated to determine whether it meets each objective. Based on the comparison presented in Table 1-1, only the Proposed Action (Alternative B) meets all of the selection criteria.

1.5 Relevant Plans, Environmental Impact Statements, Environmental Assessments, Laws, Regulations, and Other Documents

1.5.0.1 This section addresses several regulatory environmental programs that apply to the Proposed Action. Areas where these programs influence the decision-making process include environmental policy, human health and safety, air quality, soil and water quality, biological resources, land and cultural resources, environmental justice/protection of children, and hazardous waste.

1.5.1 Environmental Policy

1.5.1.1 The National Environmental Policy Act of 1969 (NEPA) requires that environmental information be made available to public officials and citizens prior to any action being taken. The NEPA process is intended to help public officials make decisions based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.

1.5.1.2 Title 32 of the Code of Federal Regulations (CFR), Part 989, commonly written as 32 CFR 989, implements the Air Force Environmental Impact Analysis Process. It describes specific tasks and procedures to ensure compliance with NEPA.

1.5.2 Human Health and Safety

1.5.2.1 The Occupational Safety and Health Act of 1970 requires that employers provide safe and healthful working conditions. This act provides an enforcement mechanism for minimizing occupational hazards and exposure.

TABLE 1-1
Selection Criteria Evaluation Summary
Environmental Assessment for 309th CMXG/MXCD Landing Gear Remanufacturing Lean Transformation Project – Buildings 505, 507, and 511

Alternatives	Selection Criteria		
	Increased Workload Efficiency	**Ongoing Landing Gear Mission Accomplishment**	**Minimize Impacts to Human Health and the Environment**
ALTERNATIVE A: NO ACTION			
Continue to operate with an inadequate landing gear maintenance and manufacturing facility.	No	No	Yes
ALTERNATIVE B: PROPOSED ACTION			
Reorganize Buildings 505, 507, and 511: procure, refurbish, and relocate equipment; and modify process flows and parts routing. The repair process and layout will be transformed in accordance with lean manufacturing concepts.	Yes	Yes	Yes
ALTERNATIVE C			
Relocate landing gear remanufacturing operations to another area of Hill AFB.	Yes	No	Yes
ALTERNATIVE D			
Relocate landing gear remanufacturing operations to another Air Force facility.	Yes	No	Yes

1.5.2.2 Air Force Instruction 91-301 details the Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program. The purpose of the AFOSH program is to minimize loss of Air Force resources and manage risks by protecting Air Force personnel from occupational deaths, injuries, or illnesses.

1.5.3 Air Quality

1.5.3.1 The 1970 Clean Air Act (CAA) and its 1990 amendments establish federal policy to protect and improve the nation's air quality while protecting human health and the environment. The CAA requires that adequate steps be taken to control the release of air pollutants and prevent significant deterioration in air quality. The Utah Department of Environmental Quality, Division of Air Quality, has enforcement power on behalf of the United States Environmental Protection Agency.

1.5.3.2 The location of the proposed action is in an area that is currently designated as attainment or maintenance attainment for all pollutants for which National Ambient Air Quality Standards (NAAQS) have been established. Salt Lake and Davis counties are designated as attainment for all criteria pollutants except that they are designated in

maintenance status for 1-hour ozone. Because of the maintenance designation for 1-hour ozone, the federal conformity requirements of Title 40 of the CFR Part 93 Section 153 (designated as 40 CFR 93.153) apply. Ozone is not a primary pollutant, meaning it is not emitted by a source. Ozone is formed in the atmosphere from photochemical reactions of the emitted pollutants oxides of nitrogen (NO_x) and volatile organic compounds (VOCs).

1.5.3.3 The purpose of the General Conformity Rule is to:

- Ensure that federal activities do not interfere with the budgets in the State Implementation Plan (SIP)
- Ensure that actions do not cause or contribute to new violations of the NAAQS
- Ensure the attainment and maintenance of the NAAQS

1.5.3.4 All federal actions require a demonstration of conformity with an applicable SIP in all areas not designated as attainment unless specifically exempt (40 CFR 93-150 and 40 CFR 93.153 [b] – [e]). Environmental Protection Agency regulations identify certain exempt actions, including actions where the total of the direct and indirect emissions of a proposed action are below specified minimum regulatory threshold (*de minimis*) levels. The *de minimis* levels for VOCs and NO_x for the Davis County maintenance area is 100 tons per year for each pollutant.

1.5.4 Soil and Water Quality

1.5.4.1 The objective of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of United States waters. The Water Quality Act of 1987 established a program for the identification of waters affected by toxic pollutants, and implementation of specific controls to reduce those toxics.

1.5.4.2 Air Force Instruction 32-7064, *Integrated Natural Resources Management*, explains how to manage natural resources on Air Force property in compliance with federal, state, and local standards. This instruction gives installations a framework for documenting and maintaining Air Force natural resource programs.

1.5.5 Biological Resources

1.5.5.1 The Endangered Species Act requires federal agencies that fund, authorize, or implement actions to avoid jeopardizing the continued existence of federally listed threatened or endangered species, or destroying or adversely affecting their critical habitat. Federal agencies must evaluate the effects of their actions through a set of defined procedures, which may include preparation of a Biological Assessment and formal consultation with the United States Fish and Wildlife Service.

1.5.5.2 The purpose of the Endangered Species Act is to establish conservation methods for both endangered and threatened species and the ecosystems upon which the endangered and threatened species depend. This act also requires all federal agencies to cooperate with state and local agencies to resolve water resource issues in concert with conservation of endangered species.

1.5.6 Land and Cultural Resources

1.5.6.1 The National Historic Preservation Act (NHPA) of 1966 provides the principal authority used to protect historic properties, establishes the National Register of Historic Places, and defines (in Section 106) the requirements for federal agencies to consider the effects of an action on properties on or eligible for listing on the National Register.

1.5.6.2 Protection of Historic and Cultural Properties (36 CFR 800 [1986]) provides an explicit set of procedures for federal agencies to meet their obligations under the NHPA, including resource inventory and consultation with State Historic Preservation Officers.

1.5.6.3 The Archeological Resources Protection Act of 1979 ensures that federal agencies protect and preserve archeological resources on federal or Native American lands and establishes a permitting system to allow legitimate scientific study of such resources.

1.5.6.4 Air Force Instruction 32-7065, *Cultural Resources Management*, sets guidelines for protecting and managing cultural resources in the United States and its territories and possessions.

1.5.7 Environmental Justice/Protection of Children

1.5.7.1 Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, is designed to focus the attention of federal agencies on the human health and environmental conditions in minority and low-income communities. It requires federal agencies to adopt strategies addressing environmental justice concerns within the context of agency operations.

1.5.7.2 Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, directs federal agencies to identify and assess environmental health risks and safety risks that may disproportionately affect children and ensure that policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

1.5.8 Hazardous Waste

1.5.8.1 The Resource Conservation and Recovery Act of 1976 and its associated Hazardous and Solid Waste Amendments define hazardous waste and describe in some detail how these wastes are to be collected and disposed. Training requirements for personnel dealing with hazardous waste are prescribed along with collection site descriptions and inspection requirements.

1.5.8.2 The Federal government has delegated the administration and application of its hazardous waste program to the State of Utah. The program in Utah is administered by the State of Utah Department of Environmental Quality, Division of Solid and Hazardous Waste. The Utah Administrative Code Section R315 details the State of Utah Hazardous Waste Management Rules.

1.5.8.3 The Air Force hazardous waste program is in some ways more restrictive than the Federal program due to special security and administrative requirements. The Air Force program is described in Air Force Instruction 32-7042, *Solid and Hazardous Waste Compliance*, dated 12 May 1994**.**

1.6 Decisions that Must Be Made

1.6.0.1 The decision to be made, based on the results of this environmental assessment (EA) and using the objectives enumerated above in Section 1.3, is whether the 309th CMXG/MXCD Landing Gear Repair Squadron Lean Transformation would have significant impacts on human health or the environment. This decision-making process is also intended as a planning tool to determine which alternative will produce the best results relative to mission accomplishment and environmental impacts. The decision will be determined in accordance with 32 CFR 989 EIAP.

1.7 Scope of this Environmental Analysis

1.7.1 History of the Planning and Scoping Process

1.7.1.1 The scope of this EA is to define issues that potentially impact the process renovations and operation of lean manufacturing processes in Buildings 505, 507, and 511. The following resource categories have been considered while determining potential impacts of the alternatives:

- Aircraft Operations
- Noise
- Air Quality
- Safety and Occupational Health
- Earth Resources
- Water Resources
- Infrastructure/Utilities
- Hazardous Materials and Wastes
- Biological Resources
- Cultural Resources
- Environmental Justice
- Socioeconomic Resources

1.7.1.2 Each of the resource categories were discussed during a scoping meeting, which was held prior to the development of this EA. Representatives from the proponent's organization, Hill AFB's Environmental Management Division, and the document authors attended the meeting. During this meeting, relevant resource categories were identified.

1.7.1.3 The Administrative Record for this project contains all scoping information, site inspection notes, and correspondence compiled during the preparation of this EA. The Administrative Record for this project is available on request from the Hill AFB Environmental Management Directorate.

1.7.2 Issues Studied in Detail

1.7.2.1 Impacts associated with each relevant resource category were evaluated with respect to the relevant alternatives as none, minimal, positive, or negative. Resource categories with minimal, positive, or negative impacts are discussed in detail in Chapter 3. Specific impacts associated with each alternative for each of these issues are addressed in

Chapter 4. Resources with no impact were not evaluated further; rationale for this is presented in Section 1.7.3.

1.7.2.2 Noise. No increase in noise will occur as a result of operation once the facility is constructed. However, short-term, renovation-related noise is expected in association with the Proposed Action. Associated noise levels will have no impact on workload efficiency, no impact on the Landing Gear remanufacturing mission, and no impact on human health or the environment.

1.7.2.3 Air Quality. Four high velocity oxygen fuel (HVOF) metal spray booths are scheduled for installation in Building 511 as part of the lean transformation. A Title V amendment will be submitted to incorporate this additional emission source. In addition, short-term, renovation-related air emissions may occur as a result of the proposed renovation activities. Renovation-related air emissions will have no impact on workload efficiency, no impact on the Landing Gear remanufacturing mission, and no impact on human health or the environment.

1.7.2.4 Earth Resources. Minor soil disturbance may occur during renovation with the installation of some minor drain lines, concrete pads for outdoor equipment, and inside concrete equipment isolation pads. The subject property is located in a paved area; therefore, no previously undisturbed soil will be impacted by the Proposed Action. Soil disturbance will have no impact on workload efficiency, no impact on the Landing Gear remanufacturing mission, and no impact on human health or the environment.

1.7.2.5 Infrastructure/Utilities. Minimal impacts to existing infrastructure will occur as a result of the Proposed Action. Utility connections and drains lines may need to be relocated. Utility relocation will have no impact on workload efficiency, no impact on the Landing Gear remanufacturing mission, and no impact on human health or the environment.

1.7.2.6 Hazardous Materials and Hazardous Waste. There will be no new hazardous materials or hazardous waste associated with the Proposed Action (Cox, 2006). All wastes will continue to be managed according to the Hill AFB Hazardous Waste Management Plan. New hazardous waste collection sites will be established in the building and appropriate site personnel will be appointed and trained.

1.7.2.7 Socioeconomic Resources. An improved work environment results in a more efficient repair process. The new work environment would result in a positive impact on workload efficiency, a positive impact on the Landing Gear remanufacturing mission, and a positive impact on human health and the environment.

1.7.3 Issues Eliminated from Further Study

1.7.3.1 Aircraft Operations. The Maintenance Directorate at Hill AFB provides depot-level repair, modification, and maintenance support to major aircraft weapons systems, specifically the F-16 Fighting Falcon, A-10 Thunderbolt, C-130 Hercules, and the Peacekeeper and Minuteman Intercontinental Ballistic Missiles. The Maintenance Directorate also tests, repairs, manufactures, and modifies F-4, F-16, F/A-22, F-111, C-130, A-10, and B-2 aircraft (Hill AFB, 2003a). The subject property is currently utilized for aircraft operations. The land use will remain unchanged under both the Proposed and No-Action Alternatives.

1.7.3.2 Safety and Occupational Health. According to Hill AFB policy, all construction plans are reviewed (as appropriate) by Hill AFB Bioenvironmental Engineering Services. At that time, any potential health concerns are reviewed with the contractor(s) performing the construction work. During renovation, all personnel are required to comply with 29 CFR 1926, *Safety and Health Regulations for Construction*. Other worker health and safety concerns are addressed in Standard Operating Procedures and in the facility designs. Once the renovated facility becomes operational, safety should increase since the workflow will be organized, the overcrowded conditions will be eliminated, and new, safer machinery will be installed.

1.7.3.3 Water Resources – Surface Water. The Davis-Weber irrigation canal bounds the northern and northeastern perimeter of the Base. Storm water retention ponds are located throughout the Base. The closest retention pond to the Subject Property is Pond 1, which is located approximately 1,100 feet to the southeast. Pond 3 is located approximately 4,060 feet to the southwest of the Subject Property (See Figure 1-2). There are no surface water bodies in the immediate vicinity of the Subject Property.

1.7.3.4 Water Resources – Groundwater. Three groundwater aquifers lie beneath Hill AFB. One is a shallow, unconfined aquifer and two are confined aquifers, called the Sunset and Delta aquifers. To date, the shallow groundwater aquifer beneath Hill AFB has not been formally classified under Utah Administrative Code R317-6, Groundwater Quality Protection. However, based on the available groundwater quality data and State of Utah classification criteria, the shallow groundwater would be designated as Class II—Drinking Water Quality. At sites under investigation and remediation by Hill AFB, regulated contaminant concentrations exceed groundwater quality standards. The shallow aquifer at these locations would be classified as Class III—Limited Use Groundwater. The Sunset and Delta aquifers are located approximately 500 to 1,000 feet below the ground surface at Hill AFB, and are presently used as drinking water sources. Both aquifers are classified as Class IA—Pristine Groundwater. No contamination has been identified in either of the deeper aquifers (Loucks, 2006). The Proposed Action will not adversely affect groundwater in any of these aquifers. Outdoor concrete pads and minor drain lines may be installed in existing asphalt areas, therefore, groundwater infiltration rates will not be affected.

1.7.3.5 Biological Resources – Wildlife. Hill AFB is a disturbed area, with limited areas of natural habitat. No critical wildlife habitat is included in the Subject Property. Wildlife would not be impacted by the Proposed Action.

1.7.3.6 Biological Resources – Threatened and Endangered Species. As part of the Air Force's obligation to identify and manage natural resources, comprehensive species inventories have been conducted on Hill AFB in the vicinity of the subject property for plants, mammals, birds, rodents, butterflies, and insects. No resident threatened or endangered species or state species of concern have been found in the area. Based on information obtained from the Utah Natural Heritage Program, the only federally listed species believed to have a potential presence within 10 miles of Hill AFB include the bald eagle (*Haliaeetus leucocephalus*), desert tortoise (*Gopherus agassizii*), June sucker (*Chasmistes liorus*) and Ute ladies' tresses (*Spiranthes diluvialis*). None of these species has been found to reside on Hill AFB (Moss, 2006).

1.7.3.7 In addition, according to data provided by the Utah Division of Wildlife Resources, threatened or endangered species occurring or possibly occurring in Davis County include the yellow-billed cuckoo (*Coccyzus americanus*), razorback sucker (*Xyrauchen texanus*), California condor (*Gymnogyps californianus*), Mexican spotted owl (*Strix occidentalis lucida*), southwestern willow flycatcher (*Empidonax traillii extimus*), and Utah prairie dog (*Cynomys parvidens*). None of these species has been found to reside on Hill AFB. There is no critical or important habitat present in the area of the subject property (Moss, 2006); therefore, threatened and endangered wildlife species would not be affected by the Proposed Action.

1.7.3.8 Biological Resources – Wetlands and Floodplains. None of the approximately 20 acres of Hill AFB wetlands are located near the Subject Property. Additionally, there are no floodplains in the vicinity of the Proposed Action. Neither renovation nor operation of the proposed facility will affect any of these identified wetlands or floodplains

1.7.3.9 Cultural Resources. Hill AFB has three proposed historic districts. The Subject Property is not located in any of these districts. No archaeological or historical sites have been identified either on or in the immediate vicinity of the Subject Property (Hirschi, 2006).

1.7.3.10 Environmental Justice. The Proposed Project would have no effect on environmental justice. There is no expected change in the demographic profile of any group in the area surrounding the Base. No minority or low-income groups or populations of children would be disproportionately impacted by the Proposed Action. Similarly, the No-Action Alternative would have no effect on environmental justice issues.

1.8 Applicable Permits, Licenses, and Other Coordination Requirements

1.8.0.1 Construction Storm Water Permit. Since the area to be developed and disturbed by construction equipment exceeds 1 acre, a Notice of Intent for a Construction Storm Water permit will be obtained as part of the Utah General Storm Water Permit (Permit No. UTR100000, Part III D), and a Construction Storm Water Plan will be developed and implemented to prevent runoff during construction from leaving the Subject Property and impacting other areas of the Base. There are two storm drains located in the vicinity of the Proposed Action that will be protected from construction debris, as required by the General Storm Water Permit. A Notice of Termination will be submitted upon completion of construction.

1.8.0.2 Title V Air Permit. Hill AFB is a major source of VOC and NO_x emissions. It operates pursuant to a Title V air permit which covers all sources on the Base, including the landing gear remanufacturing facility. The Title V Permit will be amended in order to incorporate installation of the four HVOF booths. Since the direct and indirect emissions associated with the Proposed Action are well below the *de minimis* levels, the Proposed Project is exempt from the conformity requirements.

1.8.0.3 Asbestos and Lead-Based Paint Surveys. Prior to renovation activities, asbestos and lead-based paint surveys need to be performed. These surveys should be scheduled with the Hill AFB Civil Engineering Asbestos Shop at (801) 777-6782. In addition, if any issues arise during the course of action concerning POL and/or storage tanks, asbestos or lead-based

paint, or if there are spill prevention/response questions or concerns, Lisa Aschbrenner/CEVC should be contacted at (801) 777-1897

1.8.0.4 Construction Planning. Any construction projects on Hill AFB property must involve the participation of the Civil Engineering Department Community Planner, Mr. Bert Whipple. Mr. Whipple can be reached at (801) 777-1171.

1.8.0.5 Hazardous Materials. Lockers for any type of flammable or corrosive material that may be required in new locations at Hill AFB must have approval from the Hill AFB Fire Department. Steve Carter, the Fire Department contact, can be reached at (801) 777-2817.

1.9 Document Organization Overview

1.9.0.1 The remainder of this document is organized as follows:

- Chapter 2 — Description and evaluation of the alternatives.
- Chapter 3 — The existing conditions and environmental resources in the area to be affected by the alternatives.
- Chapter 4 — The basis for the comparison of the environmental consequences of each of the alternatives.
- Chapter 5 — A list of preparers and their responsibilities.
- Chapter 6 — References used in preparation of this EA.
- Chapter 7 — A list of agencies and persons contacted during the preparation of this EA, including the topic of consultation and date contacted.

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2.0 Alternatives Including the Proposed Action

2.1 Introduction

2.1.0.1 This section is the essence of the EA. It describes the activities of the No-Action Alternative and all action alternatives. Based on the descriptions of the relevant resources described in Chapter 3 and the predicted effects of all alternatives in Chapter 4, this section presents the predicted attainment of the project objectives and the predicted effects of all alternatives on the quality of the human environment in a summary comparison, providing the decision maker and the public a clear basis for choice. Finally, this chapter identifies the Air Force's preferred alternative.

2.2 Description of Alternatives

2.2.1 No-Action Alternative

2.2.1.1 Principal Actions of No-Action Alternative. Under the No-Action Alternative, Hill AFB would continue utilizing the existing, inadequate facilities. The current working conditions are substandard and adversely affect the morale and well-being of assigned military, civilian, and contractor personnel. The organization of the resulting facility is inefficient because the flow of the parts through the facility is disorganized and wasteful.

2.2.1.2 Mitigation and Monitoring. No mitigation or monitoring activities are associated with the No-Action Alternative.

2.2.1.3 Past Relevant Actions. There are no past relevant actions associated with the landing gear remanufacturing processes in Buildings 505, 507, and 511.

2.2.1.4 Present Relevant Actions Not Part of the No-Action Alternative. There are no present relevant actions associated with the landing gear remanufacturing processes in Buildings 505, 507, and 511.

2.2.1.5 Reasonably Foreseeable Relevant Actions Not Part of the No-Action Alternative. There are no reasonably foreseeable relevant actions associated with the landing gear remanufacturing processes in Buildings 505, 507, and 511.

2.2.2 Proposed Action

2.2.2.1 Principal Actions of Proposed Action. The Proposed Action would consist of reorganizing work space in Buildings 505, 507, and 511. Equipment will be refurbished, replaced, or decommissioned. The reorganized space would incorporate similar landing gear remanufacturing work as is now contained in Buildings 505, 507, and 511. There could be a slight increase in the amount of hazardous materials used and thus, hazardous waste generated, due to possible future workload increases. Implementation of lean manufacturing would institute standardized work practices and waste reduction or elimination practices.

2.2.2.2 Mitigation and Monitoring. No mitigation or monitoring activities are associated with the Proposed Action.

2.2.3 Alternative C: Relocation to Another Area of Hill Air Force Base

2.2.3.1 Principal Actions of Alternative C. Alternative C involves relocation of the landing gear remanufacturing to another area of Hill AFB. This alternative would either involve construction of an entirely new facility or extensive renovation of an existing structure.

2.2.3.2 Mitigation and Monitoring. No mitigation or monitoring activities are associated with Alternative C.

2.2.4 Alternative D: Relocation to Another Air Force Base

2.2.4.1 Principal Actions of Alternative D. Alternative D involves relocation of the landing gear remanufacturing operations to another Air Force base. This alternative would involve identifying a location for workload performance at another Air Force Materiel Command base.

2.2.4.2 Mitigation and Monitoring. No mitigation or monitoring activities are associated with Alternative D.

2.3 Process Used to Develop the Alternatives

2.3.1 History and Development Process of Alternatives

2.3.1.1 Buildings 505 and 507 were originally constructed in 1977. Building 511 was originally constructed in 1958. The existing landing gear maintenance and new manufacturing operations have been housed in these buildings since 1977. The existing facilities are poorly configured and outdated for their use. While the location of Buildings 505, 507, and 511 offer advantages such as proximity to supporting shops (Building 503, hydraulic pneudraulic; and Building 510, new manufacturing machine shop), the facility is overcrowded and workflow processes are inefficient due to spatial constraints and aging equipment.

2.3.1.2 The Lean Transformation Project has completed an equipment evaluation which consisted of a baseline of equipment condition, recommendations for equipment upgrades and relocation, and procurement of new equipment. In addition, current processes were observed and product family groupings were defined. Family groupings were then used to define individual strategic business units and required cells within each unit. Specific cell design dictates procurement, refurbishment, and relocation of equipment; modification of process flows and parts routing; and possible physical changes to existing processes.

2.3.1.3 The current configuration of the landing gear maintenance and new manufacturing facilities is restricted in the amount of workload that can be accomplished. The Proposed Action would increase workload capacity and effectively adapt the facilities to changes in the workload mix. The addition of modernized equipment and the application of lean manufacturing techniques will allow for quality to be maintained at the manufacturing cell level, thereby producing high-quality, repaired end items dependably and more efficiently.

2.3.2 Alternatives Eliminated from Further Consideration

2.3.2.1 Alternative C – Relocate Landing Gear Maintenance and New Manufacturing Operations to Another Area of Hill AFB. Alternative C would involve renovating existing space or constructing a new landing gear remanufacturing facility within Hill AFB boundaries. There are few existing facilities with available, excess space within the Industrial Area which satisfy the project requirements such as close proximity to other supporting shops. Land use throughout the remainder of the Base restricts the type of workload to the existing area. Therefore, Alternative C has been dismissed from further consideration.

2.3.2.2 Alternative D – Relocate Landing Gear Maintenance and New Manufacturing Operations to Another Air Force Base. Alternative D would involve relocating the landing gear maintenance and manufacturing operations to another Air Force base. No other materiel command Air Force base is configured to perform this type of work. Therefore, Alternative D has been dismissed from further consideration.

2.4 Summary Comparison of Alternatives

2.4.0.1 Both the Proposed Action and No-Action alternatives were considered in detail. No long-term environmental impacts are expected from either action. The Proposed Action would satisfy the objectives and selection criteria discussed in Section 1.3. The No-Action Alternative would not satisfy the stated objectives.

2.4.0.2 A summary of the environmental effects of each alternative is presented in Table 2-1. Based on the information provided in this table, no effects are anticipated for aircraft operations, water resources, safety and occupational health, hazardous materials and waste, biological resources, cultural resources, and environmental justice. A detailed evaluation of potential impacts on the following resource categories is provided in Chapters 3 and 4.

- Noise
- Air quality
- Earth resources
- Infrastructure/utilities
- Hazardous Materials and Wastes
- Socioeconomic resources

2.5 Identification of the Preferred Alternative

2.5.0.1 The Proposed Action, developing and implementing a lean/cellular concept for production operations in Buildings 505, 507, and 511, is the preferred alternative.

TABLE 2-1
Comparison Matrix of Environmental Effects
Environmental Assessment for 309th CMXG/MXCD Landing Gear Remanufacturing Lean Transformation Project – Buildings 505, 507, and 511

Resource Category	Proposed Action	No Action
Aircraft Operations	No Effect	No Effect
Noise	Minimal Effect; - Short-term renovation noise	No Effect
Air Quality	Negative Effect; - Short-term renovation-related fugitive dust - HVOF Booth installation will require Title V Permit amendment	No Effect
Safety and Occupational Health	No Effect	No Effect
Earth Resources	Minimal Effect;	No Effect
Geology	Minor soil disturbance may occur during renovation activities.	
Topography		
Soils		
Water Resources	No Effect;	No Effect
Surface Water	-No planned increase in discharge of industrial wastewater to Industrial Wastewater Treatment Plant (IWTP) sewer. -No effect for Stormwater, since amount of impervious surfaces remains unchanged.	
Groundwater		
Infrastructure/Utilities	Minimal Effect;	No Effect
Sanitary Sewer	- New utility connections would need to be constructed - Possible new connection to the Industrial Wastewater Conveyance System - Slight increase in amount of electricity used due to increased size of facility.	
Potable Water		
Solid Waste Management		
Storm Drainage		
Transportation Systems		
Electricity/Natural Gas		
Hazardous Materials and Wastes	Minimal Effect: No new hazardous materials or waste generation is planned New storage areas will be defined during renovation activities. All wastes would continue to be managed according to the Hill AFB Hazardous Waste Management Plan	No Effect
Hazardous Materials		
Hazardous Waste		
Biological Resources	No Effect; Existing site is completely paved	No Effect
Vegetation		
Wildlife		
Threatened and Endangered Species		
Wetlands		
Floodplains		

Resource Category	Proposed Action	No Action
Cultural Resources	No Effect	No Effect
Historical Resources		
Archaeological Resources		
Socioeconomic Resources	Positive Effect; New facility would consolidate existing workload and enhance efficiency of processes. No increase in work force is planned.	Negative Effect; Work would continue under less than optimal conditions.
Environmental Justice	No Effect	No Effect
Processes Identified for Completion Prior to Construction Site Preparation	Construction Stormwater Runoff Controls Permit Title V Air Permit Amendment Lead-based Paint and Asbestos Surveys	None

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3.0 Affected Environment

3.1 Introduction

3.1.0.1 This section describes the relevant resources that would be affected by the alternatives if they were implemented. This section also describes relevant pre-existing factors which may affect project implementation and operation (i.e., noise, air quality, earth resources, infrastructure/utilities, and socioeconomic resources). Together with the description of the Proposed Action and No-Action Alternative in Chapter 2, and with the predicted effects of the Proposed Action in Chapter 4, this section helps establish the scientific baselines against which the decision maker and the public can compare the effects of all action alternatives.

3.2 Description of Relevant Facilities and/or Operations

3.2.1 Relevant Facilities

3.2.1.1 The landing gear remanufacturing facilities housed in Buildings 505, 507, and 511 are organized in a traditional "batch process" layout with the inefficiencies inherent in this process. To remanufacture landing gear more efficiently and address any future increase in workload the remanufacturing operations are being reorganized.

3.2.2 Relevant Operations

3.2.2.1 The Landing Gear Repair Squadron repairs landing gear parts and components in support of various weapon systems such as the F-4, F-16, F-15, T-38, A-10, B-1, B-2, B-52, C-130, KC-131, C-5A, and C-17 aircraft. Parts and components for additional new weapons systems, such as the F/A-22 and F-35, are expected to be remanufactured in this facility. To perform this workload efficiently, the processes are undergoing a lean transformation.

3.3 Description of Relevant Affected Resources

3.3.0.1 This section presents a discussion of the resources present at Hill AFB. This section also discusses potential issues which must be considered prior to proceeding with the Proposed Action. This discussion focuses on the following areas: noise, air quality, earth resources, infrastructure, and socioeconomics.

3.3.1 Noise

3.3.1.1 Engine noise from the testing and flight of aircraft is present throughout the day although it is not persistent. In a typical year, more than 50,000 takeoffs and landings will be logged by locally based and transient aircraft (Hill AFB, 2003a).

3.3.1.2 Noise contours have been modeled for aircraft operations in order to site noise sensitive functions on the Base. Maximum mission noise contours have been mapped for

this purpose. The Subject Property is located within the 80 and 85 decibel (dB) noise contours. Permissible noise exposure, according to Title 29 CFR Part 1910 Subpart G (29 CFR 1910.95), is 90 dB for 8 hours per day.

3.3.1.3 The Air Force has developed the Air Installation Compatible Use Zone (AICUZ) program to minimize development that is incompatible with aviation operations in areas on and adjacent to military airfields. AICUZ land use recommendations are based on uses compatible with exposure to aircraft noise and safety considerations. Recommended compatible land uses are derived from data on noise contours and safety zones. The Proposed Action is a compatible land use for this location.

3.3.2 Air Quality

3.3.2.1 Air quality in the vicinity of Hill AFB (Davis and Weber counties) is influenced by vehicular, refinery, Davis County Burn Plant emissions, aircraft operations, and other on- and off-Base industrial emissions. Hill AFB is located in both Davis and Weber counties and is currently in attainment for all NAAQS. Formerly, there was a NAAQS for 1-hour ozone, but that standard was repealed when the new 8-hour ozone NAAQS was enacted. At the time of the repeal, both Salt Lake and Davis counties had maintained the 1-hour ozone standard but had not applied for redesignation as an attainment area. Because both Salt Lake and Davis counties are in maintenance status for 1-hour ozone; the anti-backsliding requirements of the Clean Air Act dictate that the federal conformity requirements of 40 CFR 93.153 apply. The conformity threshold emission level for ozone in maintenance areas is 100 tons per year for NO_x and VOCs, the two pollutants which contribute to the formation of ozone. Emissions associated with this project will not exceed this level and a conformity analysis is not required.

3.3.2.2 Renovation and development activities may temporarily increase fugitive emissions of particulate matter less than 10 microns in aerodynamic diameter (PM_{10}). Standard methods to mitigate fugitive emissions will be implemented and are expected to keep PM_{10} levels far below the NAAQS.

3.3.2.3 The Title V Permit will be modified to include the HVOF booths that will be installed adjacent to Building 511.

3.3.3 Earth Resources

3.3.3.1 Much of Hill AFB has been developed for a variety of industrial uses to support the Hill AFB mission. The location of the Proposed Action is currently within existing buildings and developed parking areas with concrete and asphalt surfaces.

3.3.3.2 A small remnant of property located along the north end of Aspen Avenue (approximately 4 miles to the west of the project area) near the western boundary of Hill AFB is used for gardens and farming by resident Base personnel. The Proposed Project will not affect this site. The location of the proposed addition is within a designated industrial area and is not currently developed for agricultural use, nor will the project affect any of the existing earth resources at Hill AFB.

3.3.4 Infrastructure/Utilities

3.3.4.1 The Base infrastructure consists of systems that support basewide activities. Examples of Base infrastructure include rail and other transportation facilities; industrial wastewater, stormwater, and sanitary sewer systems; fueling and defueling areas and facilities; electrical stations and power lines; surplus equipment and materials storage areas; and waste treatment or disposal areas. Structures in the vicinity of the Subject Property include roadways, stormwater, sanitary sewers, and power lines. Additional connections to the existing Industrial Wastes Conveyance System may be made as part of the subject project. Such connections will not cause any significant impact on the environment.

3.3.5 Hazardous Materials and Wastes

3.3.5.1 Buildings 505, 507, and 511 are located in the landing gear repair facility section of Hill AFB. Major aircraft and parts maintenance is performed in this area. A majority of the facilities use and store hazardous chemicals. This area of the Base has been active since the late 1950s.

3.3.6 Socioeconomic Resources

3.3.6.1 Presently, the Hill AFB workforce comprises approximately 23,000 civilian, military, and contractor personnel. More than 50 percent of the personnel at the Base are civilian. The workforce at Hill AFB is drawn from throughout northern Utah (Fisher, 2006). Even as workload in the landing gear repair facility increases, as projected, no new hires are proposed. Therefore, the proposed project will not significantly affect socioeconomic resources at the base or in the community around the Base. The increased workload that is projected will be handled by the existing workforce because of the increased efficiency of the new facility and the implementation of lean manufacturing techniques.

3.4 Description of Relevant Pre-Existing Environmental Factors

3.4.0.1 Since Buildings 505, 507, and 511 are located in a developed, industrial area of the Base, there are no relevant pre-existing environmental factors considered during the evaluation of the subject property. The area was had limited investigation as part of the *Hill Air Force Base South Area of Operable Unit 9 Final Comprehensive Data Evaluation* (Hill AFB, 2001). This investigation was performed to identify areas of soil and groundwater contamination in the industrial areas of Hill AFB. The results of the investigation did not indicate significant areas of soil or groundwater contamination in the vicinity of the Subject Property.

3.5 Description of Areas Related to Cumulative Effects

3.5.0.1 Detailed analysis contained in Chapter 4 does not identify cumulative effects relative to the Proposed or No-Action alternatives. Therefore, no areas related to cumulative effects have been identified.

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4.0 Environmental Consequences

4.1 Introduction

4.1.0.1 This section presents the scientific and analytical basis for the summary comparison of effects presented in Section 2.4 of this EA. It presents the detailed predication of the attainment or non-attainment of the project objectives and the predicted positive and negative effects on the quality of the human environment.

4.2 Predicted Attainment of the Project Objectives of All Alternatives

4.2.1 Predicted Attainment of Project Objective #1 – Increased Workload Efficiency

4.2.1.1 Alternative A: No Action. The No-Action Alternative would not increase workload efficiency because current workload would continue in the congested setting, and future workload increases would place both workspace and labor force beyond capacity. Future workload increases will likely have to be outsourced to the private sector. Outsourcing decreases workload efficiency due to delays in separating the workload to be outsourced, packaging for transport, shipping to and from the outsourced facility, and potential damage during transport.

4.2.1.2 Alternative B: Proposed Action. The Proposed Action would increase workload efficiency because the reorganization would allow both increased space for existing operations and space for increased workload capacity. New weapons systems repair and workload mix would be incorporated into the new design.

4.2.2 Predicted Attainment of Project Objective #2 – Ongoing Landing Gear Mission Accomplishment

4.2.2.1 Alternative A: No Action. The No-Action Alternative would not allow the ongoing Landing Gear remanufacturing mission accomplishment because workspace and labor-force are at capacity and could not handle an increase in workload or repairs of the new weapons systems without substantial renovation.

4.2.2.2 Alternative B: Proposed Action. The Proposed Action would allow ongoing Landing Gear remanufacturing mission accomplishment because an increase in workspace would allow additional staff as well as an increase in the number and type of repaired landing gear components.

4.2.3 Predicted Attainment of Project Objective #3 – No Significant Impact to Human Health or the Environment

4.2.3.1 Alternative A: No Action. The No-Action Alternative would have no significant impact to human health or the environment.

4.2.3.2 Alternative B: Proposed Action. The Proposed Action would have no significant impact to human health or the environment.

4.3 Predicted Effects on Relevant Affected Resources of All Alternatives

4.3.0.1 The environmental consequences of developing the Subject Property are discussed in this section. This section discusses impacts to the resources that were identified for detailed analysis in Section 2.4.0.2. For each relevant affected resource, the following analyses are presented:

- Direct impacts of no action
- Direct impacts of the proposed action
- Indirect impacts
- Cumulative impacts

4.3.1 Noise

4.3.1.1 Direct Impacts of No Action. No additional noise would be generated by the No-Action Alternative.

4.3.1.2 Direct Impacts of Proposed Action. No long-term exposure to additional noise would occur as a result of implementing the Proposed Action. Any noise generated during renovation activities would be limited to areas immediately adjacent to the site. Any potential health concerns for site workers or program participants exposed to excessive noise during these activities will be addressed in the construction/remodeling plans. No change in noise impacts over current levels will occur due to operation of the new facility.

4.3.1.3 Indirect Impacts. Comparison to project objectives does not indicate noise-related indirect impacts associated with either the Proposed or No-Action Alternative.

4.3.1.4 Cumulative Impacts. Comparison to project objectives does not indicate noise-related cumulative impacts associated with either the Proposed or No-Action Alternative.

4.3.2 Air Quality

4.3.2.1 Direct Impacts of No Action. The No-Action Alternative would have no impact on air quality.

4.3.2.2 Direct Impacts of Proposed Action. The Title V permit would be modified to include the HVOF booths to be constructed adjacent to Building 511.

4.3.2.3 Dust may be generated during renovation, but control measures specified in the *Hill Air Force Base Main Base Fugitive Dust Control Plan* (Hill AFB, 2003b) will be used to keep dust to a minimum. Short-term fugitive emissions including VOCs, carbon monoxide, NO_x,

PM_{10}, hazardous air pollutants, and oxides of sulfur may result from internal combustion engines and heavy equipment utilized at the renovation site. The magnitude of these short-term fugitive emissions is *de minimis*.

4.3.2.4 Hourly and annual emissions generated by traffic associated with travel to and from the Subject Property will be no different from the current setting since no increase in number of employees is planned as a result of this action.

4.3.2.5 Permitted air emissions from operations at the new facility will not change from emissions currently associated with the existing facility.

4.3.2.6 Indirect Impacts. Comparison to project objectives does not indicate air quality-related indirect impacts associated with either the Proposed or No-Action Alternative.

4.3.2.7 Cumulative Impacts. Hill AFB is located in both Davis and Weber counties and is currently in attainment for all NAAQS. Salt Lake and Davis counties are in maintenance status for 1-hour ozone; however, the threshold emission level for ozone in maintenance areas is 100 tons per year. Since emissions associated with this project will be well below this level, neither the Proposed Action nor the No-Action Alternative will contribute significantly to the deterioration Davis County's attainment status for 8-hour ozone nor its maintenance status for 1-hour ozone.

4.3.3 Earth Resources

4.3.3.1 Direct Impacts of No Action. No impacts to earth resources would be generated by the No-Action Alternative.

4.3.3.2 Direct Impacts of Proposed Action. Renovation activities in the Subject Property may leave small areas of exposed and disturbed soil, susceptible to wind erosion. The interval during which soil is exposed will be very limited because the existing site is completely paved. Renovation will entail the minor removal of the pavement, site preparation, and immediate pouring of concrete for equipment pads. Implementation of Best Management Practices in the Construction Storm Water Pollution Prevention Plan will mitigate soils from leaving the Subject Property via stormwater runoff. Implementation of Best Management Practices during renovation will also mitigate fugitive air emissions of soil particles during the time when the underlying soil is exposed. All disturbed areas will be recovered with asphalt and structures; therefore, future erosion will be kept to a minimum.

4.3.3.3 If shallow soil contamination is encountered during renovation activities, appropriate containment and disposal measures would be required. The Environmental Management Division would be contacted to ensure proper handling of the soil.

4.3.3.4 Indirect Impacts. Comparison to project objectives does not indicate earth resource related indirect impacts associated with either the Proposed or No-Action Alternative.

4.3.3.5 Cumulative Impacts. Comparison to project objectives does not indicate earth resource related cumulative impacts associated with either the Proposed or No-Action Alternative.

4.3.4 Infrastructure/Utilities

4.3.4.1 Direct Impacts of No Action. The No-Action Alternative would have no impact on utilities.

4.3.4.2 Direct Impacts of Proposed Action. Process renovations associated with the Proposed Action will impact existing utilities in the area. One connection to the Industrial Water Conveyance Line will be constructed to support the Proposed Action, and there is a possibility that process renovations will impact sanitary sewers, potable water lines, electrical, and natural gas lines. To prevent a negative impact from occurring (e.g., causing a break in the storm sewer, etc.), the presence and location of sanitary sewers, stormwater sewers, potable water lines, transportation systems, electrical, or natural gas lines (as appropriate) in the vicinity of these properties must be confirmed by Red Stakes, at (801) 777-1995.

4.3.4.3 Renovation activities include taking containers and/or equipment to DRMO. These actions may result in additional releases to the storm system. The associated contaminants should be addressed in stormwater discharge permits.

4.3.4.4 Indirect Impacts. Comparison to project objectives does not indicate utility-related indirect impacts associated with either the Proposed or No-Action Alternative.

4.3.4.5 Cumulative Impacts. Comparison to project objectives does not indicate utility-related cumulative impacts associated with either the Proposed or No-Action Alternative.

4.3.5 Hazardous Materials and Wastes

4.3.5.1 Direct Impacts of No Action. The No-Action Alternative would have no impact on hazardous materials and wastes.

4.3.5.2 Direct Impacts of Proposed Action. Process renovations associated with the Proposed Action may involve relocation of improperly stored equipment. Impacts should be minimized through proper disposal of storage containers and equipment that were exposed to non-conducive weather conditions.

4.3.5.3 Indirect Impacts. Comparison to project objectives does not indicate hazardous materials and wastes-related indirect impacts associated with either the Proposed or No-Action Alternative.

4.3.5.4 Cumulative Impacts. Comparison to project objectives does not indicate hazardous materials and wastes-related cumulative impacts associated with either the Proposed or No-Action Alternative.

4.3.6 Socioeconomics

4.3.6.1 Direct Impacts of No Action. The No-Action Alternative would have no impact on socioeconomics.

4.3.6.2 Direct Impacts of Proposed Action. Process renovations associated with the Proposed Action may provide short-term revenue to local equipment suppliers and construction workers. This is a minor positive impact for the surrounding community. Process

renovations will not affect any of the operations that occur at the Base, so the Proposed Action will have no socioeconomic impact on the workforce at Hill AFB.

4.3.6.3 Indirect Impacts. No additional jobs would be created as a result of the Proposed Action or the No-Action Alternative, therefore no demographic impact is expected.

4.3.6.4 Cumulative Impacts. Comparison to project objectives does not indicate socioeconomic-related cumulative impacts associated with either the Proposed or No-Action Alternative.

4.4 Unavoidable Adverse Environmental Impacts

4.4.0.1 The discussion of potential environmental impacts (presented in Section 4.1) indicates that neither the Proposed Action nor No-Action Alternative would create unavoidable adverse environmental impacts.

4.5 Relationship between the Short-Term Use of the Environment and Long-Term Productivity

4.5.0.1 Developing the Proposed Action provides a durable setting for continued support of the Hill AFB mission objectives. Therefore, implementing the proposed alternative would improve long-term productivity of the Base.

4.6 Irreversible and Irretrievable Commitments of Resources

4.6.0.1 The proposed alternatives would not cause an irreversible and irretrievable commitment of resources.

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5.0 List of Preparers

5.0.0.1 The following personnel were involved in the preparation of this EA:

- Staci Hill, P.E., CH2M HILL Project Manager
- Wendy Longley-Cook, Ph.D., P.E., J.D., CH2M HILL Senior Technical Consultant
- Sam Johnson, Hill AFB NEPA Program Manager, 75 CEG/CEVR
- Kay Winn, Hill AFB NEPA Project Manager, 75 CEG/CEVOR

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Loucks, Mark. 2006. E-mail containing comments on *Draft Environmental Assessment for Enhanced Use Leasing, West Side Development, Phase 1 South.* Received July 6, 2006.

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7.0 List of Persons and Agencies Consulted

7.0.0.1 The following agencies and persons were consulted during the preparation of this EA.

- CH2M HILL, Associate Hydrogeologist, OU 10 Project Manager, Todd L. Isakson, todd.isakson@ch2m.com, (801) 350-5222 – discussed groundwater contamination at Hill AFB. June 2006.
- CH2M HILL, Associate Scientist, Hill AFB Air Quality Project Manager, Melissa Cary, melissa.cary@ch2m.com, (801) 775-6989 – discussed fugitive emissions and attainment status at Hill AFB. June 2006.
- CH2M HILL, Senior Technologist, Gary Colgan, gary.colgan@ch2m.com, (801) 350-5276 – discussed geology at Hill AFB and at subject property. June 2006.
- CH2M HILL, Senior Project Manager, Michael Cox, mcox@ch2m.com – discussed nature and extent of proposed action. June 2006.
- Hill Air Force Base, 75th Civil Engineering Squadron, Base Community Planner, Bert Whipple, albert.whipple@hill.af.mil, (801) 777-2569 – discussed construction in the area of the subject property. June 2006.
- Hill Air Force Base, 75th Air Base Wing, Public Affairs, Barbara Fisher, barbara.fisher@hill.af.mil, (801) 777-4557 – discussed makeup of Hill AFB workforce. June 2006.
- Hill Air Force Base, Environmental Management Directorate, Archaeologist, Jaynie Hirschi, jaynie.hirschi@hill.af.mil, (801) 775-6920 – requested archaeological survey and historic building information. June 2006.
- Hill Air Force Base, Environmental Management Directorate, Natural Resources Geographic Information Systems Specialist, Sanford Moss, sanford.moss@hill.af.mil, (801) 775-6972 – discussed flora and fauna of Hill AFB. June and September 2006.
- Hill Air Force Base, Environmental Management Directorate, Natural Resources Manager, Marcus Blood, marcus.blood@hill.af.mil, (801) 775-4618 – discussed endangered species at Hill AFB. June 2006.
- Hill Air Force Base, Environmental Management Directorate, Stormwater, Mike Petersen, mike.petersen@hill.af.mil, (801) 775-6904 – discussed Stormwater Management Plan. June 2006.

7.0.0.2 To fully comply with NEPA regulations, a copy of the Proposed Final Environmental Assessment will be made available for public review and comment.

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