ENVIRONMENTAL ASSESSMENT OF ENTRY CONTROL POINT UPGRADES FOR DOVER AIR FORCE BASE, DELAWARE

SEPTEMBER 2003

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ABBREVIATIONS AND ACRONYMS

°F	Degrees Fahrenheit
436 AW	436th Airlift Wing
436 CES/CEV	436th Civil Engineering Squadron, Environmental Flight
ACM	Asbestos Containing Material
AFB	Air Force Base
AFI	Air Force Instruction
AFOSH	Air Force Occupational and Environmental Safety, Fire Protection, and Health
AFPD	Air Force Policy Directive
AFRC	Air Force Reserve Command
AMC	Air Mobility Command
AOC	Area of Concern
AQCR	Air Quality Control Region
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CRM	Cultural Resources Manager
CRMP	Cultural Resources Management Plan
CWA	Clean Water Act
CY	Calendar Year
DE	District Engineer
DERP	Defense Environmental Restoration Program
DNHI	Delaware Natural Heritage Inventory
DNREC	Delaware Department of Natural Resources and Environmental Control
DOD	U.S. Department of Defense
DSWA	Delaware Solid Waste Authority
EA	Environmental Assessment
ECP	Entry Control Point
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FFA	Federal Facilities Agreement
FIP	Federal Implementation Plan
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
FPCON	Force Protection Condition
HAP	Hazardous Air Pollutant
HSWA	Hazardous and Solid Waste Amendments
IAP	Initial Accumulation Point
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
INRMP	Integrated Natural Resources Management Plan
LBP	Lead Based Paint
MFH	Military Family Housing
mg/m^3	milligrams per cubic meter
MSL	mean sea level
MSW	Municipal Solid Waste
NAAQS	National Ambient Air Quality Standards
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxide(s)
NPDES	National Pollution Discharge Elimination System
NPL	National Priority List
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWP	Nationwide Permit
O_3	Ozone
P.L.	Public Law
Pb	Lead
PM_{10}	Particulate Matter $\leq$ 10 microns in diameter
$PM_{2.5}$	Particulate Matter $\leq$ 2.5 microns in diameter
POL	Petroleum, Oil, and Lubricants
ppm	parts per million
PSD	Prevention of Significant Deterioration
QD	safe-quantity distance
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendment and Reauthorization Act
SCS	Soil Conservation Service
SHPO	State Historic Preservation Office
SIP	State Implementation Plans
SO_2	Sulfur Dioxide
SR	State Road
TCP	Traditional Cultural Properties
tpy	tons per year
TSCA	Toxic Substances Control Act
TSP	Total Suspended Particulate
U.S.	United States
U.S.C.	United States Code
UFC	Unified Facilities Criteria
USACE	U.S. Army Corps of Engineers
USAF	United States Air Force
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UST	Underground Storage Tank
VOC	Volatile Organic Compound
VRC	visitor reception center
$\mu g/m^3$	micrograms per cubic meter

FINDING OF NO SIGNIFICANT IMPACT (FONSI)
AND
FINDING OF NO PRACTICABLE ALTERNATIVE (FONPA)

ENTRY CONTROL POINT UPGRADES AT DOVER AIR FORCE BASE, DELAWARE

INTRODUCTION

The 436th Airlift Wing (436 AW) of the United States Air Force (USAF) has proposed to accomplish Entry Control Point (ECP) upgrades for Dover Air Force Base (AFB), Delaware. Dover AFB proposes to modify the three primary ECPs on the base to improve security and safety. The Proposed Action and the No Action Alternative were assessed in the attached Environmental Assessment (EA). Dover AFB is a USAF base under the Air Mobility Command (AMC) and is headquarters to the 436 AW. The 436 AW provides support for Dover AFB, including financial, personnel, housing, maintenance, legal, recreational, medical, fire protection, base security, and chaplain services.

PURPOSE OF AND NEED FOR THE PROPOSED ACTION

All U.S. Department of Defense (DoD) installations are required to seek effective ways to minimize the likelihood of mass casualties from terrorist attacks against DoD personnel in the buildings in which they work and live. While terrorists have many tactics available to them, they frequently use explosive devices when they target large numbers of DoD personnel. Most existing DoD buildings offer little protection from terrorist attacks. By applying the standards provided in Unified Facilities Criteria (UFC) 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings*, Dover AFB would become a lesser target of opportunity for terrorists.

Current ECPs do not meet the standards specified in UFC 4-010-01. The need for the Proposed Action is to modify existing structures and construct new access lanes and facilities at the main ECPs of Dover AFB that would improve gate security, personnel safety, and reduce traffic congestion while maintaining access control requirements to meet the standards specified in UFC 4-010-01.

DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action includes three construction projects, which include reconfiguring the Anti-terrorism/Force Protection (AT/FP) infrastructure at the North, Main, and South Gates. No changes in personnel requirements or aircraft operations would occur.

Proposed Modifications for the Main Gate. Under the Proposed Action, the following construction activities would be undertaken at the Main Gate:

- Construct a third inbound lane from the ECP to Tuskegee Street
- Install a canopy, islands for ID checkers, crash protection devices, and cameras
- Construct a new vehicle turnaround just east of the gatehouse
- Construct an auxiliary pull-off area east of the gatehouse
- Install a vehicle inspection area with a shelter, south of the visitor reception center (VRC) parking lot
- Close the north leg of Tuskegee Street at outbound Main Gate Way, and install grassed concrete pavers and a drop-in bollard system (for emergency vehicle access)
- Remove the driveway loop south of Bldg 520 (Support Group Headquarters) and replace with grass
- Install arresting systems about 400 feet east of the gatehouse on Main Gate Way, just prior to Atlantic Street
- Add high (minimum 18-inch) curbs, fences, and other features, as required, to prevent gate runners

Proposed Modifications for the North Gate. Under the Proposed Action, the following construction activities would be undertaken:

- Construct a permanent 200-square-foot guardhouse/visitor's reception area south of the existing ECP
- Construct a third inbound ID check lane at the gatehouse
- Install a canopy; raised islands for both inbound lanes, crash cushions, and other standard upgrade features
- Construct a turnaround area just to the east of the gatehouse
- Construct a new RAM inspection area prior to the gatehouse with one inspection shelter, three open lanes, and limited Security Forces parking

- Install vehicle-arresting systems and overwatch position approximately 400 feet east of the gatehouse
- Install non-mountable, 18-inch curbs between the gatehouse and the arresting systems

Proposed Modifications for the South Gate. Under the Proposed Action, the following construction activities would be undertaken:

- Remove the existing gatehouse (Building 265)
- Construct a truck holding area, dual storage lanes to the inspection area, two covered inspection bays (20 feet by 80 feet each), and an open inspection bay/by-pass lane
- Install state-of-the-art inspection pits, cameras, and lighting
- Install mirrors to provide overhead view of truck/trailer tops
- Provide a reject lane prior to entry into the base
- Install hydraulic barriers to be lowered to allow individual trucks into and out of the base
- Construct a small parking area along Arnold Drive for escort vehicles
- Construct an improved turnaround capacity for trucks approaching South Gate on southbound U.S. 113
- Widen 26th Street between Arnold Drive and Atlantic Street to a 36-foot wide, three-lane roadway, and increase the radius at the intersection of Atlantic Street and 26th Street to accommodate larger tractor-trailers

NO ACTION ALTERNATIVE

Under the No Action Alternative, existing conditions would remain as is and none of the proposed projects would occur. If the No Action Alternative were carried forward, there would be no change in or effects on air quality, geological resources, water resources, biological resources including wetlands, cultural resources, hazardous materials, and waste management, and infrastructure and utilities at Dover AFB. However, safety of base personnel and visitors could be compromised and the ECPs at Dover AFB would be susceptible to potential terrorist attacks if the No Action Alternative were implemented.

ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

Analysis of the Proposed Action indicates that the affected environment would not be significantly impacted by proceeding with the proposed ECP construction activities. However, a small portion of the proposed ECP project at the South Gate is located within a wetland.

Wetlands. The Proposed Action would directly affect less than 0.10 acres of wetlands in proximity to the South Gate. As such, activities associated with the Proposed Action would be covered under the Nationwide Permit (NWP) Program (33 C.F.R. § 330). Two or more NWPs can be combined to authorize a project (33 C.F.R. § 330.6(c)). The construction activities associated with the South Gate could be covered under one or a combination of the following NWPs: NWP 14 – Linear Transportation Projects, NWP 18 – Minor Discharges, or NWP 25 – Structural Discharges. No work would begin near the South Gate until approval is obtained for the use of the appropriate NWP(s). NWPs authorize only those activities having minimal impacts. Therefore, the Proposed Action would not result in adverse impacts to wetlands on Dover AFB.

PUBLIC REVIEW AND INTERAGENCY COORDINATION

The EA and Draft of this FONSI/FONPA were made available to the public for a 30-day review period. No public comments were received. Based on the provisions set forth in the Proposed Action, all activities were found to comply with the criteria or standards of environmental quality and coordinated with the appropriate federal, state, and local agencies. No work would begin near the South Gate until the State Historic Preservation Officer concurs that historic properties will not be affected or the 30-day review period under Advisory Council on Historic Preservation regulations has run without objection.

FINDINGS

Finding of No Practicable Alternative. Reasonable alternatives were considered, but no other alternative to the Proposed Action meets the safety or operational requirements of the 436 AW. Pursuant to Executive Orders 11990 and the authority delegated by SAFO 791.1, and taking the above information into account, there is no practicable alternative to this action and that the Proposed Action includes all practicable measures to minimize harm to the environment. This decision has been made after taking into account all submitted information, and considering a

full range of practicable alternatives, that would meet project requirements and are within the legal authority of the USAF.

Finding of No Significant Impact. After review of the EA prepared in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations, and Environmental Impact Analysis Process (EIAP), 32 C.F.R. § 989, as amended, I have determined that the Proposed Action, subject to the conditions stated above, would not have a significant impact on the quality of the human or natural environment. Therefore, an Environmental Impact Statement (EIS) does not need to be prepared. This decision has been made after taking into account all submitted information, and considering a full range of practicable alternatives that would meet project requirements and are within the legal authority of the USAF.

JOHN R. BAKER
Lieutenant General, USAF
Vice Commander

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR MOBILITY COMMAND (AMC)

16 September 2003

MEMORANDUM FOR AMC/CV

FROM: HQ AMC/JA
102 E Martin St, Rm N119
Scott AFB IL 62225-5012

SUBJECT: Legal Review of Final Environmental Assessment (EA) and Finding of No Significant Impact/Finding of No Practicable Alternative (FONSI/FONPA)—Dover Air Force Base Entry Control Points

1. After reviewing the final EA and FONSI/FONPA package for construction and upgrade activities at three Entry Control Points (ECP) for anti-terrorism/force protection measures at Dover AFB, Delaware, I find it legally sufficient subject to the condition identified below. Based on the authority contained in *Environmental Impact Analysis Process*, 32 C.F.R. § 989, AMC/CV may lawfully sign the FONSI/FONPA.

2. To satisfy the National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. §§ 4321-4370d, the Final EA discusses the need for enhancing security at entry points on Dover AFB. It outlines the Proposed Action to modify existing structures and construct new access lanes and facilities at the main ECPs that would improve gate security, personnel safety, and reduce traffic congestion while maintaining access control requirements to meet the standards specified in Unified Facilities Criteria 4-010-01.

a. The final EA also describes the "no action" alternative, the affected environment, the environmental consequences of the proposed action and the alternative, and lists the agencies and persons consulted during its preparation. It provides sufficient evidence and analysis to demonstrate that the environmental impacts of the proposed action are not significant. Therefore, a FONSI is appropriate and an Environmental Impact Statement is unnecessary. In addition, the package also serves to aid Dover AFB in complying with goals of NEPA as it pursues the action. Finally, it is written clearly enough for the public to understand the proposed action and its environmental consequences.

b. As required by Executive Order 11990, *Protection of Wetlands*, the FONPA indicates that there are no practicable alternatives to the Proposed Action and requires the AF to minimize the destruction, loss or degradation of wetlands. The FONPA asserts that practicable alternatives were unavailable due to the safety and operational requirements of the 436th Airlift Wing. Furthermore, existing transportation routes make other alternatives impracticable. Dover AFB will minimize harm to the wetlands by complying with the Nationwide Permit Program under the

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Clean Water Act regulations found at 33 C.F.R. § 330. Activities authorized under this program must meet strict terms and conditions to ensure they do not cause any more than minimal impacts on wetlands.

3. For the record, subsection 4.5.2 of the EA indicates that the Proposed Action will not affect Historic Location 57. This historic property, while in the vicinity of the action, is not located in the "area of potential effect." Construction and upgrade activities at the South Gate should not impact this archaeological site. Therefore, the action does not amount to an undertaking which may affect an historical property.

a. Dover AFB has informed the State Historic Preservation Officer (SHPO) of this determination pursuant to Advisory Council for Historic Preservation regulations in accordance with 36 C.F.R. § 800.4(d). While arguably not required to consult the SHPO, Dover AFB has indicated its intent to coordinate the action with that office consistent with the base Cultural Resources Management Plan. The SHPO has informed Dover AFB it cannot conclude that no adverse effect will occur until it has time to review the planning documents which have not yet been provided. By regulation, any obligation Dover AFB may have to consult will expire unless the SHPO objects within 30 days of receiving an adequately documented finding.

b. Given the analysis in the EA, AMC/CV could find no significant impact to cultural resources. To avoid potential conflicts with the SHPO, this finding should be conditioned upon that office subsequently concurring the Proposed Action has no effect on Historic Location 57 or the expiration of the 30 day period for an objection.

4. In conclusion and subject to satisfaction of the conditions prescribed above, the Final EA and FONSI/FONPA package for constructing and upgrading facilities at three ECPs on Dover AFB complies with Federal law, regulation and policy. If I may be of further assistance in this matter, please contact me at (618) 229-0021.

Joseph L. Miller

JOSEPH L. MILLER, Lt Col, USAF
Chief, Installations & Environmental Law Division
Office of the Staff Judge Advocate

I concur.

John E. Kellogg

JOHN E. KELLOGG, Colonel, USAF
Deputy Staff Judge Advocate
Office of the Staff Judge Advocate

cc:
HQ AMC/CE
436 AW/JA

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COVER SHEET

ENVIRONMENTAL ASSESSMENT OF ENTRY CONTROL POINT UPGRADES FOR DOVER AIR FORCE BASE, DELAWARE

Responsible Agencies: U.S. Air Force (USAF), Air Mobility Command (AMC), and 436th Airlift Wing (436 AW), Dover Air Force Base (AFB), Delaware.

Affected Location: Dover AFB, Delaware

Report Designation: Environmental Assessment (EA)

Proposed Action: Current entry control points (ECP) for Dover AFB do not meet the standards specified in Unified Facilities Criteria (UFC) 4-010-01, *DOD Minimum Antiterrorism Standards for Buildings*. All U.S. Department of Defense (DOD) installations are required to seek effective ways to minimize the likelihood of mass casualties from terrorist attacks against DOD personnel in the buildings in which they work and live. While terrorists have many tactics available to them, they frequently use explosive devices when they target large numbers of DOD personnel. Most existing DOD buildings offer little protection from terrorist attacks. By applying the standards provided in UFC 4-010-01, Dover AFB would become a lesser target of opportunity for terrorists. Therefore, Dover AFB is proposing to modify existing structures and construct new access lanes and facilities at the main ECPs for Dover AFB that would improve gate security, personnel safety, and reduce traffic congestion while maintaining access control requirements to meet the standards specified in UFC 4-010-01.

This EA has been prepared to evaluate the Proposed Action and the No Action Alternative. Resources that are considered in the impact analysis are: air quality, geological resources, water resources, biological resources, cultural resources, hazardous materials and waste management, infrastructure and utilities, and safety. The EA was made available to the public upon completion.

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ENVIRONMENTAL ASSESSMENT OF ENTRY CONTROL POINT UPGRADES FOR DOVER AIR FORCE BASE, DELAWARE

436th Airlift Wing
436th Civil Engineering Squadron/Environmental Flight
600 Chevron Avenue
Dover Air Force Base, Delaware 19902-5600

SEPTEMBER 2003

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ENVIRONMENTAL ASSESSMENT OF ENTRY CONTROL POINT UPGRADES FOR DOVER AFB, DELAWARE

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1. Purpose of and Need for the Proposed Action

1.1 Background

Dover Air Force Base (AFB) is a United States Air Force (USAF) base under the Air Mobility Command (AMC). The 436th Airlift Wing (436 AW) is the active duty wing and senior military organization at Dover AFB. The 436 AW provides command and staff supervision, along with support functions, for assigned airlift providing worldwide movement of outsized cargo and personnel on scheduled, special assignment, exercise, and contingency airlift missions. The 436 AW consists of the operations, logistics, support, and medical groups; in addition to 12 divisions and two detachments. Dover AFB employs a total of over 8,000 military, civilian, and reserve personnel.

The events of September 11, 2001 significantly changed the nation's homeland security posture. Terrorism is a clear and present danger to the United States (U.S.). The USAF's heightened security posture is expected to remain in place indefinitely. As a result and in furtherance of anti-terrorism/force protection (AT/FP) objectives, AMC has proposed several changes to Dover AFB's perimeters, particularly the base's entry control points (ECPs). At Dover AFB, initial AT/FP improvements would be realized through the modifications of the Main, North, and South Gates.

The Environmental Assessment (EA) analyzes AMC's Proposed Action and the No Action Alternative. If the analyses presented in the EA indicate that implementation of the Proposed Action would not result in significant environmental impacts, a Finding of No Significant Impact (FONSI) would be prepared. A FONSI briefly presents why a Proposed Action would not have a significant effect on the human environment and why an Environmental Impact Statement (EIS) is unnecessary. If significant environmental issues result that cannot be mitigated to insignificance, an EIS will be required, or the Proposed Action would be abandoned and no action would be taken.

Based on the analysis in the EA, the USAF, as the decision-maker, will decide whether there are significant adverse environmental impacts associated with the modification of the Main, North, and South Gates on Dover AFB. Based on the review of the analysis, the USAF will either prepare a FONSI or recommend the analysis proceed to an EIS.

1.2 Purpose of the Proposed Action

All DOD installations are required to seek effective ways to minimize the likelihood of mass casualties from terrorist attacks against DOD personnel in the buildings in which they work and live. While terrorists have many tactics available to them, they frequently use explosive devices when they target large numbers of DOD personnel. Most existing DOD buildings offer little protection from terrorist attacks. By applying the standards provided in Unified Facilities Criteria (UFC) 4-010-01, *DOD Minimum Antiterrorism Standards for Buildings*, Dover AFB would become a lesser target of opportunity for terrorists.

The intent of the standards described in UFC 4-010-01 is to minimize the possibility of mass casualties in buildings or portions of buildings owned, leased, privatized, or otherwise occupied, managed, or controlled by or for DOD. These standards provide appropriate, implementable, and enforceable measures to establish a level of protection against terrorist attacks for all inhabited DOD buildings where no known threat of terrorist activity currently exists. While complete protection against all potential threats for every inhabited building is cost prohibitive, the intent of these standards can be achieved through prudent master planning, real estate acquisition, and design and construction practices.

1.3 Need for the Proposed Action

Current ECPs do not meet the standards specified in UFC 4-010-01. The Proposed Action is needed to improve gate security, personnel safety, and reduce traffic congestion while maintaining access control requirements to meet the standards in UFC 4-010-01.

1.4 Location

Dover AFB is located partially within the corporate limits of the City of Dover and unincorporated areas of Kent County, Delaware (see Figure 1-1). The base occupies approximately 3,300 acres with an additional 589 acres under grants or easement and another 11 acres that are managed under lease agreements. Principal routes that define the base boundary include South Little Creek Road, State Route (SR)-9, and U.S. Route 113/SR-1 (DAFB 2001).

Dover AFB has two active airfields. The north-south airfield at Dover AFB divides the main installation into two primary sections. Open space, recreational areas, and limited amounts of industrial uses are located east of the airfield. The land uses west of the airfield and east of U.S.

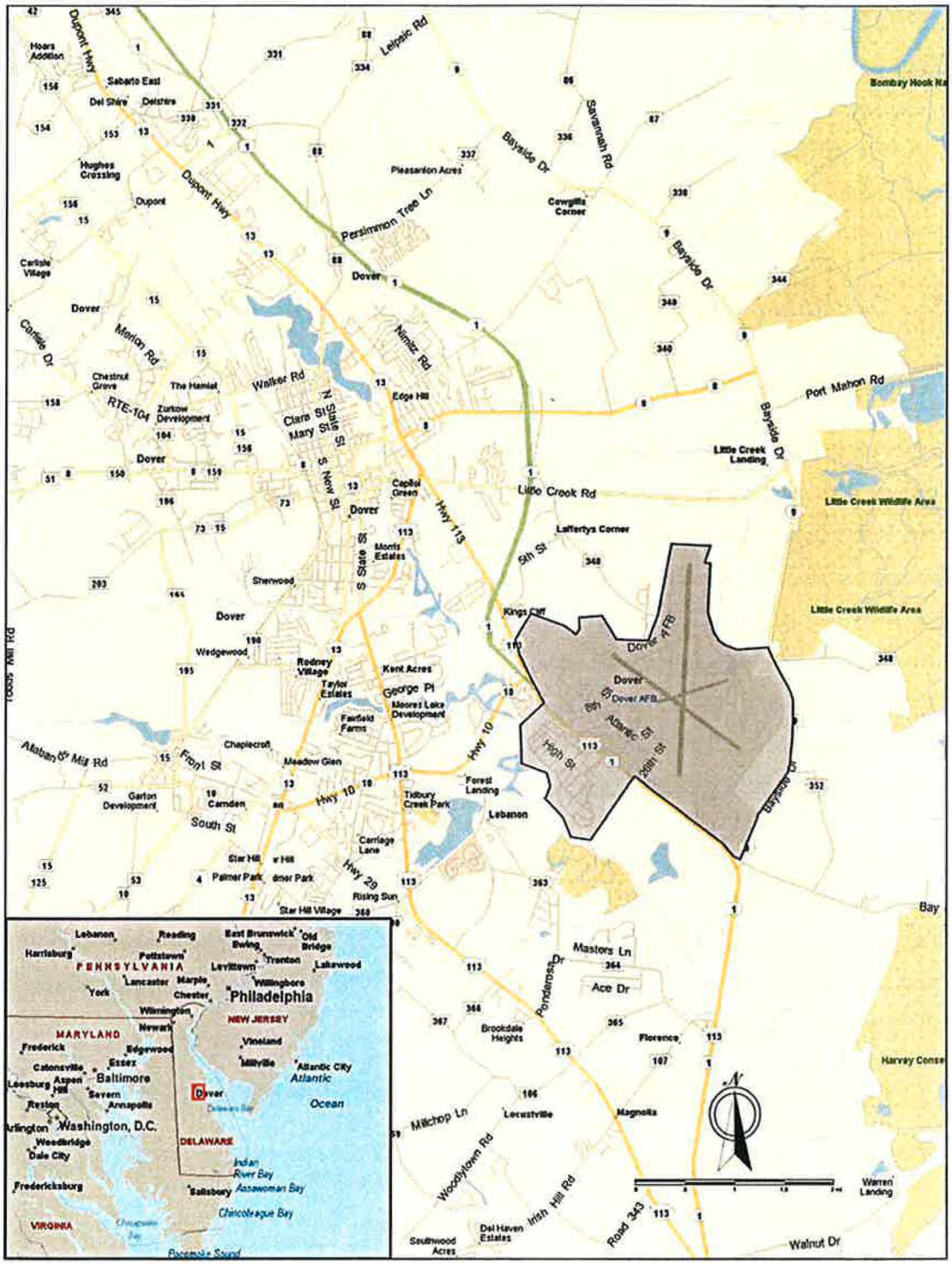

Figure 1-1. Dover AFB and Surrounding Area

Route 113 are industrial, airfield operations, administrative, community, medical and some unaccompanied personnel housing. Eagle Heights military family house (MFH), temporary lodging quarters, a golf course, and additional unaccompanied personnel housing are located west of U.S. Route 113 and east of St. Jones River. Eagle Meadows MFH (approximately 76 acres) is located 3.5 miles west of the main gate (west of the St. Jones River) along SR-26 and SR-362 near the town of Lebanon (DAFB 2001).

1.5 Summary of Key Environmental Compliance Requirements

1.5.1 National Environmental Policy Act

The National Environmental Policy Act, commonly known as NEPA, is a Federal statute requiring the identification and analysis of potential environmental impacts of proposed Federal actions before those actions are taken. NEPA established the Council on Environmental Quality (CEQ) that is charged with the development of implementing regulations and ensuring agency compliance with NEPA. CEQ regulations mandate that all Federal agencies use a systematic interdisciplinary approach to environmental planning and the evaluation of actions that may affect the environment. This process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. The intent of NEPA is to protect, restore, or enhance the environment through well-informed Federal decisions.

The process for implementing NEPA is codified in Title 40 Code of Federal Regulations (CFR) 1500-1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act.* The CEQ was established under NEPA to implement and oversee Federal policy in this process. CEQ regulations specify the following must be accomplished when preparing an EA.

- Briefly provide evidence and analysis for determining whether to prepare an EIS or a FONSI
- Aid in an agency's compliance with NEPA when an EIS is unnecessary
- Facilitate preparation of an EIS when one is necessary

Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, states that the USAF will comply with applicable Federal, state, and local environmental laws and regulations, including NEPA. The USAF's implementing regulation for NEPA is *The Environmental Impact Analysis Process (EIAP)*, 32 CFR 989, as amended.

1.5.2 Integration of Other Environmental Statutes and Regulations

To comply with NEPA, the planning and decision-making process for actions proposed by Federal agencies involves a study of other relevant environmental statutes and regulations. The NEPA process, however, does not replace procedural or substantive requirements of other environmental statutes and regulations. It addresses them collectively in the form of an EA or EIS, which enables the decision-maker to have a comprehensive view of major environmental issues and requirements associated with the Proposed Action. According to CEQ regulations, the requirements of NEPA must be integrated "with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently rather than consecutively."

The EA examines potential effects of the Proposed Action and alternatives on eight resource areas including air quality, geological resources, water resources, biological resources, cultural resources, hazardous materials and waste management, infrastructure and utilities, and safety. The following paragraphs present examples of relevant laws, regulations, and other requirements that are often considered as part of the analysis.

Air Quality

The *Clean Air Act* (CAA) establishes Federal policy to protect and enhance the quality of the nation's air resources to protect human health and the environment. The CAA requires that adequate steps be implemented to control the release of air pollutants and prevent significant deterioration in air quality. The 1990 amendments to the CAA require Federal agencies to determine the conformity of proposed actions with respect to State Implementation Plans (SIPs) for attainment of air quality goals.

Water Resources

The Clean Water Act (CWA) of 1977 (33 United States Code [U.S.C.] 1344) and the Water Quality Act of 1987, 33 U.S.C. 1251, et seq., as amended) establish Federal policy to restore and maintain the chemical, physical, and biological integrity of the nation's waters, and where attainable, to achieve a level of water quality that provides for the protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water.

Executive Order (EO) 11988, Floodplain Management, requires Federal agencies to take action to reduce the risk of flood damage; minimize the impacts of floods on human safety, health, and

welfare; and restore and preserve the natural and beneficial values served by floodplains. Federal agencies are directed to consider the proximity of their actions to or within floodplains. Where information is unavailable, agencies are encouraged to delineate the extent of floodplains at their site.

Biological Resources

The *Endangered Species Act* (ESA) 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 can include preparation of a Biological Assessment and formal consultation with the U.S. Fish and Wildlife Service (USFWS).

EO 11990, Protection of Wetlands, requires that Federal agencies provide leadership and take actions to minimize or avoid the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.

The CWA, under Section 404, contains provisions for protection of wetlands and establishes a permitting process for activities having potential effects in wetland areas. Wetlands, riverine, and open water systems are considered waters of the United States and, as such, fall under the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE).

Cultural Resources

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

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 inventorying of resources and consultation with State Historic Preservation Office (SHPO).

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.

EO 13007, Indian Sacred Sites, requires that, to the extent practicable, Federal agencies accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of such sacred sites.

EO 13084, Consultation and Coordination with Indian Tribal Governments, requires that each Federal agency shall have an effective process to permit elected officials and other representatives of Indian tribal governments to provide meaningful and timely input in the development of regulatory policies or matters that uniquely affect their communities.

Infrastructure

Infrastructure consists of the systems and physical structures that enable a population in a given area to sustain itself. Consideration of infrastructure is applicable to a proposed action or alternative where there may be an issue with respect to local capacities (e.g., utilities, transportation networks, energy) to provide the required support.

Safety

Air Force Instruction (AFI) 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program*, implements AFPD 91-3, *Occupational Safety and Health*, by outlining the AFOSH Program. The purpose of the AFOSH Program is to minimize loss of USAF resources and to protect USAF personnel from occupational deaths, injuries, or illnesses by managing risks. In conjunction with the USAF Mishap Prevention Program (AFI 91-202), these standards ensure all USAF workplaces meet Federal safety and health requirements. This instruction applies to all USAF activities, including those of the AFRC.

Noise

Federal Aviation Administration (FAA) Part 150, *Airport Noise Compatibility Planning,* provides guidance to measure noise at airports and surrounding areas and determine exposure of individuals to noise that result from the operations of an airport. FAA Part 150 identifies those land uses which are normally compatible with various levels of exposure to noise by individuals. It also provides technical assistance to airport operators, in conjunction with other local, state, and Federal authorities, to prepare and execute appropriate noise compatibility planning and implementation programs (14 CFR 150).

Socioeconomics and Environmental Justice

EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, directs Federal agencies to assess the effects of their actions on minority and low-income populations within their region of influence. Agencies are encouraged to include demographic information related to race and income in their analysis of the environmental and economic effects associated with their actions.

1.5.3 Interagency and Intergovernmental Coordination for Environmental Planning

NEPA requirements help ensure that environmental information is made available to the public during the decision-making process and prior to actions being taken. The premise of NEPA is that the quality of Federal decisions will be enhanced if proponents provide information to the public and involve the public in the planning process. The Intergovernmental Coordination Act and EO 12372, *Intergovernmental Review of Federal Programs*, require Federal agencies to cooperate with and consider state and local views in implementing a Federal proposal. AFI 32-7060 requires the USAF to implement a process known as Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), which is used for the purpose of agency coordination and implements scoping requirements.

Through the IICEP process, relevant Federal, state, and local agencies were notified of the action proposed and provided them sufficient time to make known their environmental concerns specific to the action. The IICEP process provided the opportunity to cooperate with and consider state and local views in implementing the Federal proposal. Based on the provisions set forth in the Proposed Action, all activities were found to comply with the criteria or standards of environmental quality and coordinated with the appropriate Federal, state, and local agencies. Appendix A includes a copy of the IICEP letter that was mailed to the SHPO and will include the agency response, once received. Appendix A also includes a list of state and federal agencies that will be contacted as part of the Nationwide Permit application process (see Section 4.4.2). All agency comments received will be addressed prior to implementing the Proposed Action.

2. Description of Proposed Action and Alternatives

2.1 Introduction

This section describes the Proposed Action and the No Action Alternative.

2.2 Proposed Action

The 436 AW proposes to modify three ECPs to Dover AFB in order to improve security and safety, and reduce traffic congestion at the Main, North, and South Gates. The following sections describe the Proposed Action.

2.2.1 Modification of the Main Gate

Background. The Main Gate is located just east of U.S. Route 113 on Dover AFB, west of Tuskegee Street on Main Gate Way (see Figure 2-1). The Main Gate is accessed from SR-1 and Lebanon Road. Lebanon Road provides direct access from the Eagle Heights MFH community into the Main Gate by way of an overpass bridging SR-1 (DAFB undated). The Main Gate currently has two inbound lanes with two tandem identification checker (ID checker) positions per lane and two outbound lanes. A third inbound lane goes directly into the Main Gate's visitor reception center (VRC). The Main Gate has a parking area and turnaround east of the gatehouse (DAFB 2002).

The Main Gate operates 24 hours each day and has a processing rate of approximately 600 vehicles per hour (vph) per lane and 500 vph per lane, under Force Protection Conditions (FPCONs) Alpha+ and Bravo+, respectively. The Main Gate receives 1,000 inbound vehicles during the peak morning hour and approximately 300 vehicles during the peak 15 minutes, 0645 to 0745 and 0730 to 0745, respectively.

A gate security, safety, and capacity traffic engineering study was conducted in August 2002 to analyze the Main Gate. The engineering study identified that the Main Gate experiences morning delays of 0-3 minutes per vehicle and has a maximum queue length of 25-30 vehicles. Gate lighting is adequate except where the identification checkers stand. Normally, one to two Security Forces personnel per lane are used to check identification, and one to three Security Forces personnel manage the VRC. The VRC has a good design and size for a peak load of about 30 visitors. The VRC parking lot is often at capacity because of more than ten long-term parked vehicles. The VRC currently is open 0700 to 1630 hours (DAFB 2002).

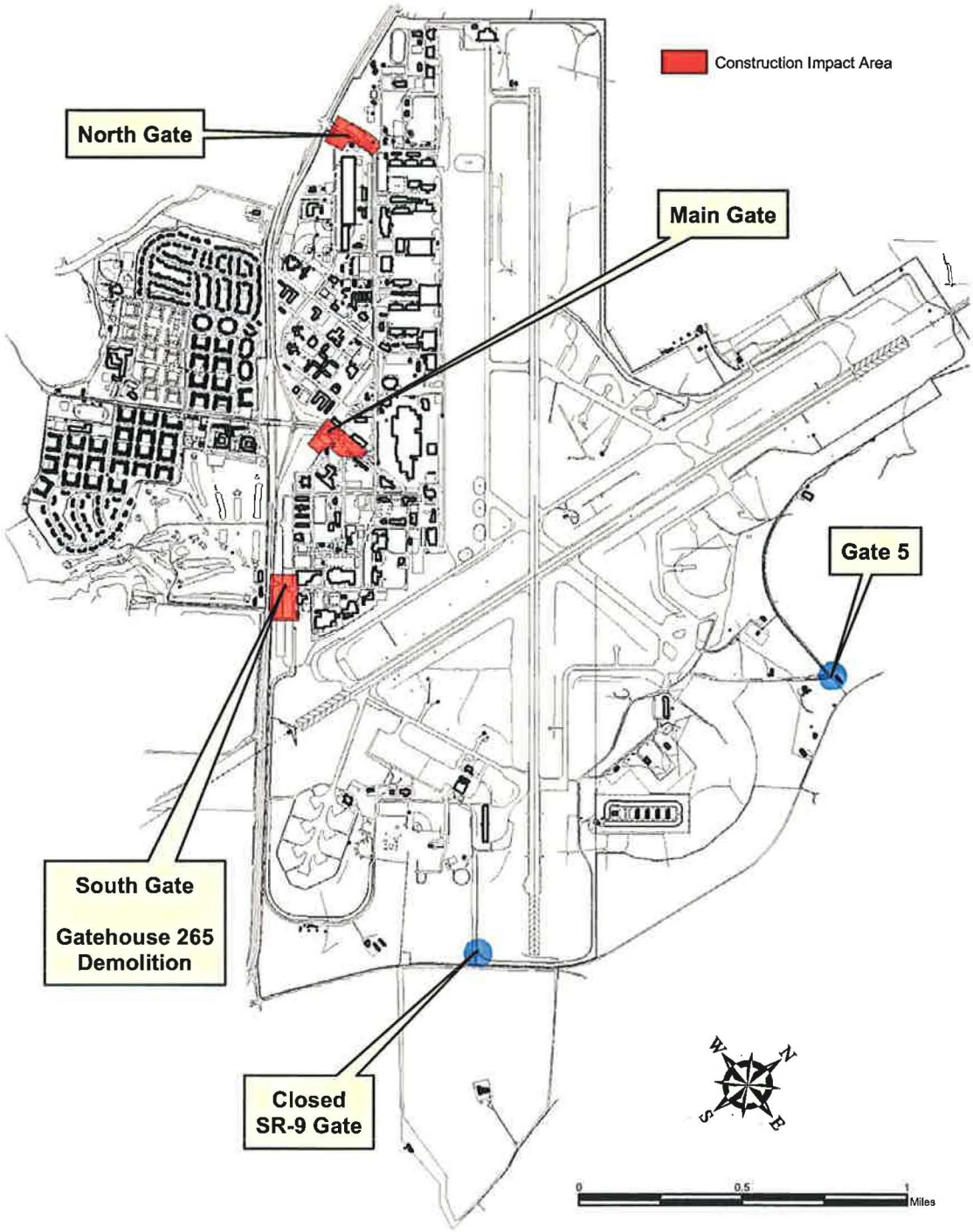

Figure 2-1. Location of Proposed Entry Control Point Upgrades on Dover AFB

Proposed Modifications for the Main Gate. Under the Proposed Action, the following construction activities would be undertaken at the Main Gate:

- Construct a third inbound lane from the ECP to Tuskegee Street.
- Install a canopy, islands for ID checkers, crash protection devices, and cameras.
- Construct a new vehicle turnaround just east of the gatehouse.
- Construct an auxiliary pull-off area east of the gatehouse.
- Install a vehicle inspection area with a shelter, south of the VRC parking lot.
- Close the north leg of Tuskegee Street at outbound Main Gate Way, and install grassed concrete pavers and a drop-in bollard system (for emergency vehicle access).
- Remove the driveway loop south of Bldg 520 (Support Group Headquarters) and replace with grass.
- Install arresting systems about 400 feet east of the gatehouse on Main Gate Way, just prior to Atlantic Street.
- Add high (minimum 18-inch) curbs, fences, and other features as required to prevent gate runners.

2.2.2 Modification of the North Gate

Background. The North Gate is located just east of U.S. Route 113 on Dover AFB, located west of the junction of Arnold Drive Extended and Atlantic Street on 2nd Street. The North Gate is accessed directly from Route 10, northbound SR-1 and southbound U.S. Route 113 (see Figure 2-1) (DAFB 2001). The North Gate currently has two inbound lanes, two outbound lanes, and a large POV, truck, and commercial vehicle inspection area on the left side of the entrance. There is no shelter in the inspection area. There is adequate lighting at the gate, but inadequate lighting at the inspection area. The inbound on-base queuing area is limited (380 feet long) (DAFB 2002).

The North Gate operates 0500 to 1700 for commercial vehicles and 0500 to 0800, 1100 to 1300, and 1530 to 1700 for POVs. The North Gate has a processing rate of approximately 600 vph per lane and 500 vph per lane, under FPCONs Alpha+ and Bravo+, respectively. It receives 850 inbound POV and commercial vehicles during the morning peak hour (this includes 45 small trucks and 5 tractor trailers) and 280 inbound vehicles during the peak 15 minutes, 0630 to 0730 and 0715 to 0730, respectively. A gate security, safety, and capacity traffic engineering study was conducted in August 2002 to analyze the North Gate. The engineering study identified that the North Gate experiences morning delays of zero to four minutes per vehicle and has a

maximum queue length of 50 vehicles and the inbound on-base queuing area is limited (380 ft long). Normally, one to two Security Forces personnel per lane are used to check identification, and two to three Security Forces personnel inspect trucks (DAFB 2002).

Proposed Modifications for the North Gate. Under the Proposed Action, the following construction activities would be undertaken:

- Construct 200-square foot guardhouse/visitors waiting area south of the existing ECP.
- Construct a third inbound ID check lane at the gatehouse.
- Install a canopy, raised islands for both inbound lanes, crash cushions, and other standard upgrade features.
- Construct a turnaround area just to the east of the gatehouse.
- Construct a new RAM inspection area prior to the gatehouse with 1 inspection shelter, three open lanes, and limited Security Forces parking.
- Install vehicle arresting systems and overwatch position approximately 400 feet east of the gatehouse.
- Install non-mountable 18-inch curbs between the gatehouse and the arresting systems.

2.2.3 Modification of the South Gate

Background. The South Gate is located just east of U.S. Route 113 on Dover AFB. It is located west of the junction of Arnold Drive on 26th Street and is accessed by the north-bound lane of U.S. Route 113 (see Figure 2-1). The South Gate currently has one inbound lane (right-turn in only) and one outbound lane (right-turn out only). There is no convenient access to the South Gate from the south-bound lane of U.S. Route 113. The South Gate is currently closed; thus, there are no traffic data available (DAFB 2002).

Proposed Modifications for the South Gate. Under the Proposed Action, the following construction activities would be undertaken:

- Remove the existing gatehouse (Building 265).
- Construct a truck holding area, dual storage lanes to the inspection area, two covered inspection bays (20 feet by 80 feet each), and an open inspection bay/by-pass lane.
- Install state-of-the-art inspection pits, cameras, and lighting.

- Install mirrors to provide overhead view of truck/trailer tops.
- Provide a reject lane prior to entry into the base.
- Install hydraulic barriers to be lowered to allow individual trucks into and out of the base.
- Construct a small parking area along Arnold Drive for escort vehicles.
- Construct an improved turnaround capacity for trucks approaching South Gate on south-bound U.S. 113.
- Widen 26th Street between Arnold Drive and Atlantic Street to a 36-foot wide, three-lane roadway; and increase the radius at the intersection of Atlantic Street and 26th Street to accommodate larger tractor trailers.

2.3 No Action Alternative

Under the No Action Alternative, Dover AFB would continue to use the facilities and infrastructure at each base ECP in their current condition and configuration. There would be no change from the existing conditions at the installation. This alternative would not address the security, safety, and traffic congestion requirements of the AMC and Dover AFB nor the standards specification UFC 4-010-01.

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3. Affected Environment

Section 3.0 describes the environmental and socioeconomic resources and conditions most likely to be affected by the proposed construction and demolition projects. This section provides information to serve as a baseline from which to identify evaluate environmental and socioeconomic changes likely to result from implementation of the Proposed Action. Baseline conditions represent current conditions. The potential environmental and socioeconomic impacts of the Proposed Action and No Action Alternative on the baseline conditions are described in Section 4.0.

In compliance with NEPA, CEQ guidelines, and 32 CFR Part 989, as amended, the description of the affected environment focuses on those resources and conditions potentially subject to impacts. Some environmental resources and conditions that are often analyzed in an EA have been omitted from this analysis. The following details the basis for such exclusions:

- **Land Use.** All activities associated with the Proposed Action would be consistent with present and foreseeable land use patterns at Dover AFB. Implementation of the Proposed Action would not significantly alter the existing land use at Dover AFB. Accordingly, the USAF has omitted detailed examination of land use.
- **Noise.** Implementation of the Proposed Action does not involve permanent alterations to aircraft inventories, operations, or missions. No new permanent ground-based heavy equipment operations are included in the Proposed Action. No activity included in the Proposed Action would result in a situation where residences would be impacted by an increase to present ambient noise levels. Furthermore, noise produced by construction and demolition activities associated with the Proposed Action would not significantly affect sensitive receptors. Accordingly, the USAF has omitted detailed examination of noise.
- **Socioeconomics and Environmental Justice.** The Proposed Action does not involve any activities that would contribute to changes in socioeconomic resources. There would be no change in the number of personnel assigned to Dover AFB, therefore there would be no changes in area population or associated changes in demand for housing and services. Accordingly, the USAF has omitted detailed examination of socioeconomics.

3.1 Air Quality

3.1.1 Definition of Resource

Air quality in a given location is determined by the concentration of various pollutants in the atmosphere. National Ambient Air Quality Standards (NAAQS) are established by the United States Environmental Protection Agency (USEPA) for "criteria pollutants," including ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter equal to or less than 10 microns in diameter (PM_{10}), particulate matter equal to or less than 2.5 microns in diameter ($PM_{2.5}$), and lead (Pb). NAAQS represent maximum levels of background pollution in the ambient air that are considered safe, with an adequate margin of safety to protect public health and welfare (see Table 3-1).

The CAA places most of the responsibility to achieve compliance with the NAAQS on the individual states and/or local agencies that have been delegated CAA authority by USEPA. This is achieved through a State Implementation Plan (SIP), which is required under the CAA. The SIP is a compilation of goals, strategies, schedules, permitting programs, and enforcement actions that lead the state into compliance with all NAAQS. Any changes to the compliance schedule or plan must be incorporated into the SIP and approved by USEPA. Areas not in compliance with a standard can be declared "non-attainment areas" by USEPA or the appropriate state or local agency. Based on the severity of an area's non-attainment (i.e., number of times that ambient air quality exceeds the NAAQS), USEPA also categorizes non-attainment areas (e.g., marginal, serious, severe, extreme). Areas designated by USEPA as being in non-attainment for one or more of the seven NAAQS may petition USEPA for re-designation as a maintenance area if they are able to demonstrate they have met the national standard for the three years preceding the re-designation request. At the time the state petitions USEPA for re-designation, it must also submit a revision of its SIP to provide for the maintenance of the applicable NAAQS for at least 10 years after re-designation ("maintenance plan") pursuant to CAA §175(A).

Under the General Conformity Rule, the CAA prohibits Federal agencies from performing projects that do not conform to a USEPA-approved SIP. In 1993, USEPA developed final rules for how Federal agencies must determine air quality conformity prior to implementing a proposed Federal action. Under these rules, certain actions are exempted from conformity determinations, while others are assumed to be in conformity if total project emissions are below *de minimis* levels established under 40 CFR Part 93.153. Total project emissions include both direct and indirect emissions caused by the Federal action.

Table 3-1. National Ambient Air Quality Standards

Pollutant	Standard Value		Standard Type
Carbon Monoxide (CO)			
8-hour Average	9 ppm[2]	(10 mg/m^3)[3,4]	Primary
1-hour Average	35 ppm	(40 mg/m^3)[3]	Primary
Nitrogen Dioxide (NO_2)			
Annual Arithmetic Mean	0.053 ppm	(100 μg/m^3)[3,5]	Primary & Secondary
Ozone (O_3)			
1-hour Average[1]	0.12 ppm	(235 μg/m^3)[3]	Primary & Secondary
8-hour Average	0.08 ppm	(157 μg/m^3)[3]	Primary & Secondary
Lead (Pb)			
Quarterly Average		1.5 μg/m^3	Primary & Secondary
Particulate ≤ 10 micrometers (PM_{10})			
Annual Arithmetic Mean		50 μg/m^3	Primary & Secondary
24-hour Average		150 μg/m^3	Primary & Secondary
Particulate ≤ 2.5 micrometers ($PM_{2.5}$)			
Annual Arithmetic Mean		15 μg/m^3	Primary & Secondary
24-hour Average		65 μg/m^3	Primary & Secondary
Sulfur Dioxide (SO_2)			
Annual Arithmetic Mean	0.03 ppm	(80 μg/m^3)[3]	Primary
24-hour Average	0.14 ppm	(365 μg/m^3)[3]	Primary
3-hour Average	0.50 ppm	(1300 μg/m^3)[3]	Secondary

Notes:

[1] The ozone 1-hour standard applies only to areas that were designated non-attainment when the ozone 8-hour standard was adopted in July 1997. The new 8-hour ozone standard is currently being contested in Federal court. No areas have been deemed non-attainment with the new 8-hour standard pending resolution of this case.

[2] ppm – parts per million

[3] Parenthetical value is an approximately equivalent concentration.

[4] mg/m3 – milligrams per cubic meter

[5] μg/m3 – micrograms per cubic meter

The CAA and the CAA Amendments of 1990 also require states to permit "major" stationary sources. A major stationary source is a facility (i.e., plant, base, or activity) that emits more than 100 tons annually of any one criteria air pollutant, 10 tons per year (tpy) of a single hazardous air pollutant (HAP), or 25 tpy of any combination of HAPs. There are 188 listed HAPs regulated under the CAA. The purpose of the permitting rule is to establish regulatory control over large facilities or processes that routinely emit significant amounts of pollutants activities and to assess and monitor their impact upon local and regional air quality.

3.1.2 Existing Conditions

Climate. Dover AFB has a humid continental climate. The Atlantic Ocean and the Delaware and Chesapeake Bays influence the region's climate and well-defined seasons. Prevailing winds are from the west/northwest most of the year. Easterly summer winds off the ocean tend to raise temperature in the area. The latter part of July is the warmest part of the year with maximum afternoon temperatures averaging 85 °F. Temperatures of 90 °F and above occur on an average of 19 days a year. Late January/early February represent the coldest part of the year when early morning temperatures average 27 °F (DAFB 2001).

Mean annual precipitation recorded in the area of Dover AFB is 42.7 inches. Precipitation is well distributed throughout the year. Approximately 20 inches of rain fall during the growing season. However, the uneven distribution of summer showers results in occasional dry periods, making crop irrigation necessary. The region's frost-free growing season extends about 163 days, from late April to the end of September. The annual snowfall period at Dover AFB is between October and April Snowfall during the period at Dover AFB averages 17.1 inches (DAFB 2001).

Thunderstorms occur an average of 34 days per year. The majority of these storms occur during the summer. Tropical storms or hurricanes occasionally impact the Dover AFB area between August and October (DAFB 2001).

The average annual wind speed is about 6 knots; however, winds upward of 50 knots may accompany severe thunderstorms (DAFB 2001).

Regional Air Quality. The USEPA classifies the air quality in an air quality control region (AQCR) or in sub-areas of an AQCR according to whether the concentration of criteria pollutants in ambient air exceeds the primary or secondary NAAQS. All areas within each AQCR are therefore designated as either "attainment," "non-attainment," or "unclassified" for each of the six criteria pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS, non-attainment indicates that air quality exceeds NAAQS, and an unclassifiable air quality designation by USEPA means that there is not enough information to appropriately classify an AQCR, so the area is considered attainment.

The General Conformity Rule requires that any Federal action meet the requirements of a SIP or Federal Implementation Plan (FIP). More specifically, CAA Conformity is assured when a Federal action *does not*:

- Cause a new violation of a NAAQS
- Contribute to an increase in the frequency or severity of violations of NAAQS
- Delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS

The conformity rule applies only to actions in non-attainment or maintenance areas and considers both direct and indirect emissions. The rule applies only to Federal actions that are considered "regionally significant" or where the total emissions from the action meet or exceed the *de minimis* thresholds. An action is regionally significant when the total non-attainment pollutant emissions exceed 10 percent of the AQCR's total emissions inventory for that non-attainment pollutant. If a Federal action meets the *de minimis* threshold requirements and is not considered regionally significant, then a full Conformity Determination is not required.

Dover AFB. Dover AFB is located in southern Kent County, Delaware. Kent County is located in the Philadelphia-Wilmington-Trenton District (District) of the USEPA Region III AQCR No. 45. The District has been designated by the USEPA as a "severe" non-attainment area for ozone (O_3), like much of the Mid-Atlantic coastal area and the Northeast, running from Richmond, Virginia to Maine. Kent County is in attainment for the other five priority air pollutants: carbon monoxide (CO), lead (Pb), particulate matter (PM_{10} and $PM_{2.5}$), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). Volatile organic compounds (VOC) and nitrogen oxides (NO_x) are precursors for ozone and are the emissions of concern under the Federal implementation plans in an area of severe non-attainment for ozone, which is the status of Kent County (436 SPTG/CEV 2001).

Two sources of emissions serve as the baseline for Kent County and Dover AFB Kent County emissions (in tons per day for the peak ozone season) are found in the Base Year Ozone State Implementation Plan (SIP) Emissions Inventory. Dover AFB emissions inventories are calculated annually. These inventories of emission sources and associated estimates of pollutant quantities generated serve as a baseline to track and plan future changes in base pollutant emission quantities (436 SPTG/CEV 2001).

The estimated emissions (tons per day for 1990 peak ozone season) for Kent County are: 65.233 tons per day of VOC and 25.843 tons per day NO_x (436 SPTG/CEV 2001).

The estimated 2000 emissions (436 SPTG/CEV 2001) in tons per year (tpy) from Dover AFB were 3.15 tpy of PM_{10}, 19.43 tpy of CO, 78.85 tpy of NO_x (which includes NO_2), 34.13 tpy SO_2, 25.53 tpy of VOCs, and 6.27 tpy of HAP. Not included in the Dover AFB figures are VOCs from commuter traffic at Dover AFB estimated at 36.83 tpy and NO_x at 24.01 tpy (436 SPTG/CEV 2001).

Dover AFB received a Title V air permit from the State of Delaware on July 4, 2001. The Title V permit includes sources such as the central heat plant, other boilers, emergency generators, solvent cleaners, stage I and II vapor recovery systems, among other items. Although the Title V permit is active, Dover AFB still maintains other air permits as required by the State of Delaware's air regulations (DAFB 2001).

The major sources of air emissions at Dover AFB are VOCs. VOC emissions associated with aircraft and vehicle maintenance and repair are the most significant HAP sources on Dover AFB. These emission sources primarily include the storage and handling of JP-8, gasoline, and diesel fuels. Secondary emission sources include solvent use, paints, thinners, and coatings. Jet engine test cells, reciprocating engines, and electric generators are additional air pollutants (DAFB 2001).

3.2 Geological Resources

3.2.1 Definition of Resource

An area's geological resources typically consist of surface and subsurface materials and their inherent properties. Principal factors influencing the ability of geological resources to support structural development are seismic properties (i.e., potential for subsurface shifting, faulting, or crustal disturbance), soil stability, and topography.

The term soil generally refers to unconsolidated materials overlying bedrock or other parent material. Soils play a critical role in both the natural and human environment. Soil depth, structure, elasticity, strength, shrink-swell potential, and erodibility determine a soil's ability to support man-made structures and facilities. Soils typically are described in terms of their series or association, slope, physical characteristics, and relative compatibility or constraints in regard to particular construction activities and types of land use.

Topography is defined as the relative position and elevations of the natural and/or man-made features of an area that describe the configuration of its surface. An area's topography is influenced by many factors, including human activity, seismic activity of the underlying geological material, climatic conditions, and erosion. Information about an area's topography typically encompasses surface elevations, slope, physiographic features (i.e., mountains, ravines, or depressions), and their influence on human activities.

3.2.2 Existing Conditions

Physiography. Dover AFB is located entirely within the Atlantic Coastal Plain Physiographic province which consists of a wide, wedge-shaped belt of Cretaceous to Recent layered sedimentary deposits of sand, gravel silt, clay limetones, chalk, and marl dipping to the southeast (DAFB 2001).

Topography. The local relief at Dover AFB is typically associated with stream channel development and/or erosion. Surface elevations range from a low of approximately 10 feet above mean sea level (MSL) along the banks of the St. Jones River to approximately 30 feet above MSL in the northwest portion of Dover AFB, in the vicinity of Buildings 919 and 946. The Dover AFB airfield elevation is approximately 30 feet above MSL (DAFB 2001).

Geology. From youngest to oldest, the near-surface stratigraphic units underlying Dover AFB are Recent sediments deposited by local rivers, the Pleistocene Columbia Formation, the Miocene Chesapeake Group (which contains only the Calvert Formation in this area), and the Eocene Piney Point Formation (DAFB 2001).

Soils. According to Dover AFB's General Plan (undated), the U.S. Department of Agriculture's (USDA), Soil Conservation Service (SCS) renamed Natural Resources Conservation Service (NRCS) 1971 Kent County Soil Survey does not identify specific soil types located on Dover AFB. However, the soil survey does provide descriptions of the three soil associations that are found on Dover AFB, namely, the Sassafras/Fallsington, Othello-Metapeake-Mattapex, and Tidal Marsh associations (DAFB undated).

Because of a history of extensive construction-related soil disturbances on much of Dover AFB, the exact nature of existing soil types on many parts of the base is not known and would likely be characterized as "Urban Complex." The Sassafras/Fallsington Association comprises approximately 50 percent of Dover AFB in the main base area. The Othello-Metapeake-

Mattapex Association comprises approximately 40 percent of the base and lies mainly in the northeastern portion of the base. The Tidal Marsh Association is found on the floodplain of the St. Jones River along the southern base boundary and in the tidal flat where the Port Mahon Petroleum, Oil, and Lubricants (POL) Annex is located. Approximately 10 percent of Dover AFB is covered by this association (DAFB 2001).

3.3 Water Resources

3.3.1 Definition of Resource

Water resources include surface water, groundwater, and floodplains. Evaluation identifies the quantity and quality of the resource and its demand for potable, irrigation, and industrial purposes.

Surface water resources consist of lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale. Stormwater flows, which may be exacerbated by high proportions of impervious surfaces associated with buildings, roads, and parking lots, are important to management of surface water. Stormwater also is important to surface water quality because of its potential to introduce sediments and other contaminants into lakes, rivers, and streams.

Groundwater consists of subsurface hydrologic resources. It is an essential resource often used for potable water consumption, agricultural irrigation, and industrial applications. Groundwater typically may be described in terms of its depth from the surface, aquifer or well capacity, water quality, surrounding geologic composition, and recharge rate.

Floodplains are areas of low-level ground present along a river or stream channel. Such lands may be subject to periodic or infrequent inundation due to rain or melting snow. Risk of flooding typically hinges on local topography, the frequency of precipitation events, and the size of the watershed above the floodplain. Flood potential is evaluated by the Federal Emergency Management Agency, which evaluates the floodplain for 100- and 500-year flood events. Federal, state, and local regulations often limit floodplain development to passive uses such as recreational and preservation activities in order to reduce the risks to human health and safety.

3.3.2 Existing Conditions

Surface Water. Storm water runoff is discharged into the Dover AFB drainage network, which is comprised of a series of inlets, manholes, pople, culverts, and ditches. Runoff is transmitted to natural low-lying areas that surround Dover AFB. Water leaves the base at several key locations. Base property situated near both Atlantic Street and Taxiway E drains to the Morgan and Pipe Elm Branches of the Little River. A small area on the east side of the base, in the vicinity of the ammunition storage area, drains to the Lewis Ditch. The remainder of the base drains to an unnamed stream that crosses the golf course, ultimately discharging to the St. Jones River. All of the surface streams eventually drain to the Delaware Bay (DAFB 2001).

Dover AFB is divided into nine drainage sub-basins based on topography and the storm water collection system: Morgan Branch, Pipe Elm Branch, Pipe Elm Branch North, Lewis Ditch, Sand Ditch, Dickinson Ditch, Radio Tower Ditch, St. Jones River, and St. Jones River West.

The Morgan Branch Drainage Area drains 96 acres into Morgan Branch. Approximately, 25 percent of this drainage area is covered by buildings, parking areas, and the northwest-southeast runway. Nearly 75 percent is frequently maintained grass intermixed with low seral stage.

The Pipe Elm Branch Drainage Area drains about 1,394 acres into Pipe Elm Branch. Approximately 75 percent of this drainage area is impervious. The north-south runway divides this drainage area into two halves. Drainage on the west side flows east before entering ditches leading to Pipe Elm Branch. East side drainage flows directly into Pipe Elm Branch. About 168 acres drain from the Pipe Elm Branch North Drainage Area. Fifty percent of this drainage area is covered by the north-south runway and the other 50 percent by intermixed grasses.

The Lewis Ditch, Sand Ditch, Dickinson Ditch, and Radio Tower Ditch Drainage Areas drain 481 acres with between 50 and 80 percent of these drainage areas being pervious.

The St. Jones River and St. Jones River West Drainage Areas receive drainage from 907 acres including base buildings, parking areas, and the golf course. Approximately 75 percent of the St. Jones River Drainage Area is impervious, while the majority of the western drainage area is covered by residential landscape (DAFB 2001).

Groundwater. Water for domestic and other purposes in the vicinity of Dover AFB is derived entirely through groundwater withdrawals from underlying aquifers. Water-bearing units of

particular importance at Dover AFB include the Columbia Aquifer of the upper Chesapeake Group, the Frederica Aquifer of the upper Chesapeake Group, the Cheswold Aquifer of the lower Chesapeake Group, and the Piney Point Aquifer of the Piney Point Formation (DAFB 2001). Water supply of the base is drawn from the Cheswold and Piney Point Aquifers. Currently, groundwater contamination at Dover AFB is confined to the Columbia Aquifer, which is not used for drinking water (DAFB undated).

Floodplains. There are areas of Dover AFB that lie within the 100-year floodplain. These areas are located on the golf course along the unnamed drainage into the St. Jones River and immediately along the river where it borders Dover AFB (DAFB undated). No 100-year floodplains are located within the proposed construction sites.

3.4 Biological Resources

3.4.1 Definition of the Resource

Biological resources include native or naturalized plants and animals and the habitats (i.e., wetlands, forests, and grasslands) in which they exist. Sensitive and protected biological resources include plant and animal species listed as threatened or endangered by USFWS.

Under the ESA, an "endangered species" is defined as any species in danger of extinction throughout all or a significant portion of its range. A "threatened species" is defined as any species likely to become an endangered species in the foreseeable future.

The USFWS recently presented an updated list of species considered as candidates for possible listing under the ESA. Although candidate species receive no statutory protection under the ESA, the USFWS has attempted to advise government agencies, industry, and the public that these species are at risk and may warrant protection under the ESA in the future.

Wetlands are important natural systems and habitats because of the diverse biologic and hydrologic functions they perform. These functions include water quality improvement, groundwater recharge and discharge, pollution mitigation, nutrient cycling, wildlife habitat and unique flora and fauna niche provisions, storm water attenuation and storage, sediment detention, and erosion protection. Wetlands are protected as a subset of the "waters of the United States" under Section 404 of the CWA. The term "waters of the United States" has a broad meaning under the CWA and incorporates deep-water aquatic habitats and special aquatic habitats (including wetlands). The USACE defines wetlands as "those areas that are inundated or

saturated with ground or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (33 CFR Part 328).

It is important to distinguish between wetland "functions" and the societal or economic "values" associated with these functions. Wetland functions are the natural properties and actions performed by various wetland ecosystems, while wetland values are expressed in terms of the relative economic and/or intrinsic worth of the functions as perceived by society. For example, stormwater storage is a typical function noted in many wetland systems. The volume of storage available in the wetland and the ability of the wetland to slow or detain storm water flows are the measurable or estimable metrics that allow for the quantification of the storm water storage function. The fact that wetlands frequently store storm water and slow runoff is of importance to society because these functions can have the effect of lessening the severity and duration of downstream flooding. Hence, the value of storm water storage to society is expressed as the lessening of flood severity or the alteration of flooding and flood flows.

The *1987 Corps of Engineers Wetlands Delineation Manual* outlines the protocols and procedures for wetlands identification and delineation. The protocols presented in the *1987 Corps of Engineers Wetlands Delineation Manual* require the presence of three basic parameters to field identify and delineate wetlands: predominance (more than 50 percent) of hydrophytic vegetation (plant species that commonly occur in wetlands); presence of hydric soils (soils developed under reducing conditions); and evidence of wetlands hydrology (the inundation or saturation by surface or groundwater periodically to support hydrophytic vegetation and develop hydric soils). In undisturbed field conditions, all three of these diagnostic criteria must be present to fulfill wetland classification criteria. The *1987 Corps of Engineers Wetlands Delineation Manual* further describes protocols to be used in the delineation of wetlands in disturbed areas (USACE 1987).

3.4.2 Existing Conditions

Vegetation. Historic agricultural practices, vegetation management, and development have altered the vegetation at the base. At present, the vast majority of grounds at Dover AFB are intensively maintained, resulting in landscaped property and a predominance of short turf grasses. Approximately 130 acres of native woodland and wetland remain, with the rest being semi-

improved and improved lawns, open fields, and impervious surfaces. A biological inventory of Dover AFB was conducted by the Delaware Natural Heritage Inventory (DNHI) (DAFB undated). DNHI identified several areas on base that continue to support native vegetation, though some have been disturbed or degraded to various degrees. The highest quality natural areas include the salt marsh and palustrine forested wetlands associated with the St. Jones River, and upland terrestrial forested areas of limited extent situated near MFH and the golf course, and on the eastern side of the base (DAFB undated).

Dover AFB is within the Oak-Pine Forest Region, Atlantic Slope Section. The original forests in this region were dominated in upland areas by canopy species such as loblolly pine, scrub pine, tuliptree, American beech, a number of hickory species, and several species of oaks. Poorly drained and lowland areas were dominated by species such as sweetgum, willow oak, pin oak, red maple, and sour gum. Isolated areas of permanent inundation were often dominated by pure stands of Atlantic white cedar or bald cypress (DAFB undated).

Prior to establishment of the base, much of the forest had been cleared for agriculture, with limited areas of woodland remaining. It is likely that remnant woodlands underwent some form of logging. Original stand timber may exist east of the hazardous cargo storage area (DAFB undated).

Wetlands. The initial jurisdictional wetland survey of Dover AFB was performed in conjunction with an Ecological Risk Assessment Phase I Site Characterization in 1992. This survey was performed at only three locations on the base—areas within and immediately adjacent to Pipe Elm Branch in the northeastern portion of the base, around Environmental Restoration Program (ERP) site LF-13 (rubble fill) east of the airfield, and adjacent to the golf course and the St. Jones River. Several additional wetland areas were observed as part of the DNHI survey in 1991 and 1992. However, these areas were not delineated, and they were identified mainly as general locations where certain obligate or facultative wetland plants occurred along with other vegetation (DAFB undated).

An additional base-wide delineation survey was performed in 1998 which included a background evaluation of soils, vegetation, hydrology, land use history, and an on-site wetland survey using methodology described in the *USACE Wetland Delineation Manual* (USACE 1987). A total of 74.11 acres of regulated waters were delineated having approximately 39 miles of boundary lines.

Threatened and Endangered Species. The upland sandpiper (*Bartramia longicauda*) is a state endangered species that has been identified at Dover AFB. The northern harrier (*Circus cyaneus*) and the short-eared owl (*Asio flammeus*) are state endangered species for breeding only and have also been identified at Dover AFB.

Species of state concern that have been identified at Dover AFB are the eastern meadowlark (*Sturnella magna*), bobolink (*Dolichonyx oryzivorous*), fourspine stickleback (*Apeltes quadratus*), mud sunfish (*Acantharcus pomotis*), green frog-fruit (*Phyla lanceolata*), and hysop-leaf hedge-nettle (*Stachys hyssopifolia*). The American redstart (*Setophaga ruticilla*), broad-winged hawk (*Buteo platypterus*), cliff swallow (*Petrochelidon pyrrhonota*), bank swallow (*Riparia riparia*), black vulture (*Coragyps atratus*), great blue heron (*Ardea herodias*), American kestrel (*Falco sparverius*), black and white warbler (*Mniotilta varia*), common moorhen (*Gallinula chloropus*), and grasshopper sparrow (*Ammodramus savannarum*) are state concern species for breeding only that have been identfied at Dover AFB.

Several other plants, including the yellow passionflower (*Passiflora lutea*), tickseed sunflower (*Bidens coronata),* and tiny-headed goldenrod (*Euthamia microcephala)* are rare state plant species identified during the 1993 study by DNHI (DNHI 1993).

3.5 Cultural Resources

3.5.1 Definition of the Resource

Cultural resources may include prehistoric and historical archaeological sites, buildings, structures, districts, artifacts, objects, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, or religious purposes. Under 36 CFR 800, Federal agencies must take into consideration the potential effect of an undertaking on "historic properties," which refers to cultural resources listed in, or eligible for inclusion in, the NRHP. In order to be determined a "historic property," the resource must meet one or more of the criteria established by the National Park Service, and outlined in 36 CFR 60.4, that make the resource eligible for inclusion in the NRHP.

Cultural resources are defined in the NHPA as prehistoric and historic sites, structures, districts, or any other physical evidence of human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or any other reason. Depending on their

condition and historic use, such resources may provide insight into living conditions of previous existing civilizations, and/or may retain cultural and religious significance to modern groups.

Typically, cultural resources are subdivided into archaeological resources (prehistoric or historic sites where human activity has left physical evidence of that activity but no above-ground structures remain standing) or architectural resources (buildings or other structures or groups of structures that are of historic or aesthetic significance). Archaeological resources comprise areas where human activity has measurably altered the earth or intact deposits of physical remains are found (i.e., prehistoric or historic habitation remains).

Architectural resources include standing buildings, bridges, dams, and other structures of historic or aesthetic significance. Generally, architectural resources must be more than 50 years old to be considered potentially eligible for nomination to the NRHP, as stated in National Register Bulletin 15. More recent structures, such as Cold War-era resources, may warrant protection if they are associated with exceptionally significant events or persons, represent remains that are so fragile that examples of any kind are extremely rare, or they have the potential to gain significance in the future, as stated in National Register Bulletin 22.

Traditional Cultural Properties (TCPs) or sacred sites can include archaeological resources, structures, neighborhoods, prominent topographic features, habitats, or areas where particular plants, animals, or minerals exist that Native Americans or other cultural groups consider to be essential for the preservation of traditional cultural practices, as stated in National Register Bulletin 38.

Cultural resources management at USAF installations is established in AFI 32-7065, *Cultural Resources Management.* The AFI details the compliance requirements for protecting cultural resources including the preparation of a Cultural Resources Management Plan (CRMP). The CRMP must include an inventory and evaluation of all known cultural resources; identification of the likely presence of other significant cultural resources; description of installation strategies for maintaining cultural resources and complying with related resource statutes, regulations, policies, and procedures; standard operating procedures and action plans that include budget, staffing and scheduling activities; clear identification and resolution of the mission impact on cultural resources; and conformance with local, state, and Federal preservation programs. In accordance with AFI 32-7065, Dover AFB developed the *Dover Air Force Base Cultural Resource Management Plan* (DAFB 2000a).

3.5.2 Existing Conditions

Cultural resources at Dover AFB are managed in accordance with applicable environmental laws including AFI 32-7064, Cultural Resources Management; 32 CFR Part 989; the NHPA of 1966, as amended, and its implementing regulations 36 CFR Part 800; EO 11593, *Protection and Enhancement of the Cultural Environment,* of 1971; NEPA of 1969, as amended, and its implementing regulation 42 U.S.C.; the Archaeological and Historic Preservation Act of 1974 (Public Law [P.L.] 93-291); the American Indian Religious Freedom Act of 1978 (P.L. 95-341); the Archaeological Resources Protection Act of 1979 (P.L. 96-95); and the Native American Graves Protection and Repatriation Act of 1990 (P.L. 101-601).

The individual responsible for the management of cultural resources on a day-to-day basis is the base Cultural Resources Manager (CRM). This individual is assigned to the 436th Civil Engineering Squadron, Environmental Flight (436 CES/CEV). Civil Engineering personnel would review proposed projects for their potential impact as part of the environmental review process. In the even that unanticipated human remains or archaeological materials are found during a project, work in the area of the find would stop, and the individual responsible for implementing the work (e.g., the non-commissioned officer in charge or the job foreman) will notify the CRM immediately. Various cultural resources studies have been conducted on Dover AFB in compliance with Section 106 and Section 110 of the NHPA (DAFB 2000a).

Archaeological Resources. In fulfillment of its requirements under Section 110 of the NHPA, Dover AFB has surveyed or assessed all of its property for archaeological resources (DAFB 2000b). Surveys have recorded eleven archaeological sites. Seven of these are potentially eligible for the NRHP, three are not eligible for the NRHP, and the eligibility of the one is unknown. Ten areas on Dover AFB have been identified where undiscovered archaeological resources may be anticipated. Any ground disturbing activities in these ten locations, or in the vicinity of potentially NRHP eligible sites will be reviewed by the SHPO before work begins (DAFB 2000a).

No American Indian graves or other culturally sensitive areas have been identified on Dover AFB.

Historical Resources. Dover AFB has completed its identification requirements under Section 110 of the NHPA of 1966, as amended. Dover AFB has inventoried all of its buildings. Hangar 1301 is listed in the NRHP. The Strategic Air Command alert facility (Building 1303), was

declared eligible for listing on the NRHP with concurrence of the SHPO, as recommended by the Cold War Inventory recommended the (Weitz 1996).

3.6 Hazardous Materials and Wastes

3.6.1 Definition of Resource

Hazardous material is defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and the Toxic Substances Control Act (TSCA), as any substance with physical properties of ignitability, corrosivity, reactivity, or toxicity that may cause an increase in mortality, a serious irreversible illness, incapacitating reversible illness, or pose a substantial threat to human health or the environment. Hazardous waste is defined by the Resource Conservation and Recovery Act (RCRA), which was further amended by the Hazardous and Solid Waste Amendments (HSWA), as any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes that poses a substantial present or potential hazard to human health or the environment.

Evaluation of hazardous materials and wastes focuses on underground storage tanks and aboveground storage tanks and the storage, transport, and use of pesticides and herbicides, fuels, and POL. Evaluation may also extend to generation, storage, transportation, and disposal of hazardous wastes when such activity occurs at or near the project site of a proposed action. In addition to being a threat to humans, the improper release of hazardous materials and wastes can threaten the health and well being of wildlife species, botanical habitats, soil systems, and water resources. In the event of release of hazardous materials or wastes, the extent of contamination varies based on the type of soil, topography, and water resources.

Special hazards are those substances that may pose a risk to human health but are not regulated as contaminants under the hazardous waste statutes. Hazards of significance associated with the Proposed Action are asbestos and lead-based paint. The presence of special hazards or controls over them may affect, or be affected by, a proposed action. Information on special hazards describing their locations, quantities, and condition assists in determining the significance of a proposed action.

To protect habitats and people from inadvertent and potentially harmful releases of hazardous substances, DOD has dictated that all facilities develop and implement Hazardous Material

Emergency Planning and Response Plans or Spill Prevention, Control, and Countermeasure Plans. Also, DOD has developed the Environmental Restoration Program (ERP), intended to facilitate thorough investigation and cleanup of contaminated sites located on military installations. These plans and programs, in addition to established legislation (i.e., CERCLA and RCRA) effectively form the "safety net" intended to protect the ecosystems on which most living organisms depend.

AFPD 32-70, *Environmental Quality*, establishes the policy that the Air Force is committed to environmentally-sound practices:

- Cleaning up environmental damage resulting from its past activities
- Meeting all environmental standards applicable to its present operations
- Planning its future activities to minimize environmental impacts
- Managing responsibly the irreplaceable natural and cultural resources it holds in public trust, and
- Eliminating pollution from its activities wherever possible.

AFPD 32-70 and the AFI 32-7000 series incorporates the requirements of all Federal regulations, other AFIs and DOD Directives for the management of hazardous materials, hazardous wastes and special hazards.

Environmental Restoration Program. The ERP is a subcomponent of the Defense Environmental Restoration Program (DERP) that became law under SARA. The ERP requires each DOD installation to identify, investigate, and cleanup hazardous waste disposal or release sites. The ERP provides a uniform, thorough methodology to evaluate past disposal sites to control the migration of contaminants, to minimize potential hazards to human health and the environment, and to clean up the environment. Description of ERP activities provides a useful gauge of the condition of the soils, water resources, and other resources that may be affected by contaminants. It also aids in the identification of properties and their usefulness for given purposes.

3.6.2 Existing Conditions

The generating location and the 436 CES/CEV are responsible for overseeing hazardous material and waste management for the installation. In conformance with the policies established by

AFPD 32-70, the 436 CES/CEV has developed plans to manage hazardous materials, hazardous wastes, and special hazards on the base.

Hazardous Materials. AFI 32-7086, *Hazardous Materials Management*, establishes procedures and standards that govern management of hazardous materials throughout the USAF. It applies to all USAF personnel who authorize, procure, issue, use, or dispose of hazardous materials, and to those who mange, monitor, or track any of those activities. The 436 AW manages hazardous materials in accordance with AFI 32-7086.

Hazardous Wastes. The 436 AW maintains a *Hazardous Waste and Used Petroleum Management Plan* as directed by AFI 32-7042, *Solid and Hazardous Waste Compliance*. The *Hazardous Waste and Used Petroleum Management Plan* provides guidance to Dover AFB personnel on handling, storage, and disposal of hazardous materials and implements the "pharmacy" system to control hazardous waste (436 AW 2001). Wastes generated at Dover AFB include used antifreeze, contaminated fuels, flammable solvents, waste paint-related materials and other miscellaneous wastes (DAFB undated).

Hazardous waste management activities at Dover AFB are performed by generating location and the 436 CES/CEV. CEV has designated locations as 90-day accumulation points and initial accumulation points (IAPs). Each organization appoints accumulation point managers and alternate managers to ensure the proper identification, handing storage and recordkeeping for hazardous wastes. Used oil and fuels are accumulated and recycled through the base recycling/resale contract. Wastes are periodically collected and transported from the storage facility by a contractor. Because hazardous wastes must be transferred outside of Building 1306 (a 90 day accumulation point) in an area unprotected from precipitation, the base is required to monitor storm water from this site entering the St. Jones River via Dover AFB Outfall 008 as part of the Dover AFB storm water permit (DAFB undated).

Asbestos. AFI 32-1052, *Facilities Asbestos Management,* provides direction for asbestos management at USAF installations. AFI 32-1052 requires installations to develop an asbestos management plan for the purpose of maintaining a permanent record of the status and condition of asbestos containing material (ACM) in installation facilities, as well as documenting asbestos management efforts. In addition, the instruction requires installations to develop an asbestos-operating plan detailing how the installation accomplishes asbestos-related projects. Asbestos is regulated by USEPA with the authority promulgated under the Occupational Safety and Health

Act. Section 112 of the CAA regulates emission of asbestos fibers to ambient air. USEPA policy is to leave asbestos in place if disturbance or removal could pose a health threat.

To fulfill the requirements of AFI 32-1052 Dover AFB has an asbestos management program in place which addresses ACM on the base. The asbestos management plan is based on an asbestos survey of the base that was originally performed in 1988-1989, and revised in 1999. Suspect ACM is addressed on an as-need basis prior to disturbance of the material. Materials to be disturbed that have been confirmed to contain asbestos are handled by qualified outside contractors (DAFB undated).

Lead Based Paint. The Residential Lead-Based Paint Hazard Reduction Act of 1992, Subtitle B, Section 408 (commonly called Title X), passed by Congress on October 28, 1992, regulates the use and disposal of lead-based paint on Federal facilities. Federal agencies are required to comply with applicable Federal, state, and local laws and regulations relating to lead-based paint (LBP) activities and hazards.

USAF policy and guidance establishes lead-based paint management at USAF facilities (USAF 1993). Additionally, the policy requires each installation to develop and implement a facility management plan for identifying, evaluating, managing, and abating LBP hazards. Dover AFB has in place a LBP management program. As with asbestos, all suspect or confirmed LBP is addressed prior to any activities that may disturb them, such as renovation, construction, demolition, etc. LBP abatement is performed by outside contractors when required (DAFB undated).

Environmental Restoration Program. Some fuels, hazardous materials, and hazardous wastes are stored and handled along the flight line in the northwestern area of the base. Most surface drainage from this portion of the base is to Morgan Branch and Pipe Elm Branch both of which flow into the Little River. Historic hazardous materials and waste handling and disposal in this same area of the base have resulted in contamination within these drainages (DAFB undated).

Dover AFB was placed on the National Priority List (NPL) in March, 1989. A Federal Facilities Agreement (FFA) was signed in August 1989 to address the environmental cleanup of hazardous substances, pollutants or contaminants present at Dover AFB. The FFA is pursuant CERCLA, RCRA, EO 12580, DERP, National Contingency Plan (NCP), and applicable State of Delaware Statutes (DAFB undated).

Site inspections conducted in the early 1990s identified, fifty-nine ERP sites at Dover AFB. The principal site types are underground storage tanks, oil-water separators, industrial waste collection drains, fire training areas, landfills, fuel spills, fuel leaks and a fuel hydrant system. Fifty-two of the ERP sites are governed by CERCLA regulations, six sites fall under the State Underground Storage Tank (UST) Program, and one site is governed by RCRA Subtitle C (DAFB undated).

A base-wide remedial investigation conducted in the mid-1990s was approved by the Environmental Protection Agency in 1997. As a result of the remedial investigation, 23 of the 59 sites were shown to require no cleanup action and were categorized as "no further action" sites. The remaining 36 sites were carried forward for further evaluation and cleanup (DAFB undated).

Pollution Prevention. AFI 32-7080, *Pollution Prevention Program,* implements the regulatory mandates in the Emergency Planning and Community Right-to-Know Act; Pollution Prevention Act of 1990; EO 12856, *Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements*; EO 12873, *Federal Acquisition, Recycling, and Waste Prevention*; and EO 12902, *Energy Efficiency and Water Conservation at Federal Facilities.* AFI 32-7080 prescribes the establishment of Pollution Prevention Management Plans. The 436 AW fulfills this requirement with the *Pollution Prevention Management Action Plan*, the *Hazardous Waste and Used Petroleum Management Plan* (436 AW 2001), and the *Solid Waste Management Plan.* These plans ensure that Dover AFB maintains a waste reduction program and meets the requirements of the CWA, the National Pollution Discharge Elimination System (NPDES) permit program and Federal, state and local laws and regulations for spill prevention, control and countermeasures.

3.7 Infrastructure and Utilities

3.7.1 Definition of the Resource

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function. Infrastructure is wholly human-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as "urban" or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to economic growth of an area. The infrastructure information provided below was obtained from the *General Plan Delaware Air Force Base Delaware* (DAFB undated) and provides a brief overview of each infrastructure component and comments on its existing general condition. The infrastructure components to be discussed in this section include

transportation systems, utilities (electrical power, natural gas, and water supply), solid waste, and sanitary systems.

Solid waste management primarily concerns itself with the availability of landfills to support a population's residential, commercial, and industrial needs. Alternative means of waste disposal may involve waste-to-energy programs or incineration. In some localities, landfills are designed specifically for, and limited to, disposal of construction and demolition debris. Recycling programs for various waste categories (e.g., glass, metals, and papers) reduce reliance of landfills for disposal.

3.7.2 Existing Conditions

Electrical Power. Power for Dover AFB, including the Eagle Heights MFH community, is supplied by the City of Dover. Two 69 kilovolts (kV), three phase transmission lines provide the source of power. One line runs parallel to SR-10 and the other parallels US 113. Both transmission lines originate from the City of Dover power plant and connect to the North Substation (Bldg. 614) and South Substation (Bldg. 250). Each substation has a 10 MVA transformer that steps down 69,000 volts to 12,470 volts. Power is supplied to base facilities through seven feeder circuits serving principal areas of the base. North Substation feeds circuits 1, 5, 6, and 7, while South Substation feeds circuits 2, 3, and 4 (DAFB undated).

Solid Waste. Solid waste management at Dover AFB includes the collection and disposal of non-hazardous solid wastes; recycling efforts; and contract disposal of overseas waste, infectious waste, and pathological waste. There are no active landfills on base, and the majority of solid wastes from Dover AFB are transported to the Central Delaware Solid Waste Authority (DSWA) landfill in Sandtown (DAFB undated).

Recycling receptacles owned and maintained by DSWA are at one site on base. DSWA removes recyclables (including magazines) from the base to their own recycling center off base. The basewide recycling program includes aluminum cans, paper, glass, and plastic. Recycling from base industrial facilities involves scrap metal, cardboard, and scrap wood handled by a 436 CES/CEV contractor.

Infectious medical waste is red-bagged or placed in sharps containers, collected by housekeeping staff, and placed in locked storage pending removal by a contractor to a permitted disposal facility (DAFB undated).

Pathological wastes from the mortuary are handled and disposed in a similar manner. All overseas waste, including infectious waste and food waste, is steam-sterilized, bagged, offloaded from aircraft, and refrigerated at the aerial port by Fleet Services personnel. A contractor removes the waste, which is then disposed of off base following USDA guidelines (DAFB undated).

Transportation. The Dover AFB roadway system should safely handle and distribute vehicular movements with a minimum amount of congestion and delay. This includes traffic movements on and off of the installation, as well as movement within the installation. Pavement condition should not inhibit these movements (DAFB undated).

Access to the base is currently achieved by two entrance gates, the Main and North gates (Figure 2-1). The North Gate is accessed from Route 10, SR-1 and from US 113. The Main Gate is accessed from SR-1 and from Lebanon Road. Lebanon Road provides direct access from the Eagle Heights MFH community into the Main Gate by way of an overpass bridging SR-1 (DAFB undated).

A diamond intersection at SR-1 and Lebanon Road provides for all the required turning movements at that intersection from off and on ramps, which enables motorists to access the Main Gate and the Eagle Heights MFH community. The North Gate is accessed directly from Route10, northbound SR-1 and southbound 113. Traffic signals control movements at the North Gate. The Main Gate overpass provides for a grade-separated entrance to the base. Traffic signals provide control of traffic movements at the on and off ramps at this intersection (DAFB undated).

Two other gates on Dover AFB are currently closed, the South Gate and an unnamed gate off of SR-9. Explosive cargo transits the base via Gate 5, located off of SR-9. These gates are identified on Figure 2-1.

3.8 Safety

3.8.1 Definition of Resource

A safe environment is one in which there is no, or an optimally reduced, potential for death, serious bodily injury or illness, or property damage. Human health and safety addresses (1) workers' health and safety during demolition and construction activities and facilities

construction and (2) public safety during demolition and construction activities and during subsequent operations of those facilities.

Construction work site safety is largely a matter of adherence to regulatory requirements imposed for the benefit of employees and implementation of operational practices that reduce risks of illness, injury, death, and property damage. The health and safety of onsite military and civilian workers are safeguarded by numerous DOD and USAF regulations designed to comply with standards issued by the Occupational Safety and Health Administration and USEPA. These standards specify the amount and type of training required for industrial workers, the use of protective equipment and clothing, engineering controls, and maximum exposure limits for workplace stressors.

3.8.2 Existing Conditions

All contractors performing construction activities at Dover AFB are responsible for following ground safety regulations and worker compensation programs, and they are required to conduct construction activities in a manner that does not pose any risk to its workers or base personnel. An industrial hygiene program addresses exposure to hazardous materials, use of personal protective equipment, and availability of Material Safety Data Sheets. Industrial hygiene is the responsibility of contractors, as applicable. Contractor responsibilities are to review potentially hazardous workplace operations; to monitor exposure to workplace chemical (e.g., asbestos, lead, hazardous material), physical (e.g., noise propagation), and biological (e.g., infectious waste) agents; to recommend and evaluate controls (e.g., ventilation, respirators) to ensure personnel are properly protected or unexposed; and to ensure a medical surveillance program is in place to perform occupational health physicals for those workers subject to any accidental chemical exposures.

Explosive safety-quantity distance (QD) zones are designated areas designed to safeguard the base population and civilian community from potential explosions. These clear zones include the area within a safety arc surrounding an explosive storage facility.

The QD zones at Dover AFB encompass explosives storage facilities, hazardous cargo parking, suspect vehicle parking areas, and build-up and pre-load areas. Dover's QD zones are primarily located east of the flightline, away from the main cantonment area. The zones' arcs range in size from 115-foot to a proposed 1,800-foot radii surrounding individual sites; variations in an arc's radius depend upon the type and quantity of explosives.

The QD zones cover a significant portion of the airfield and adjacent lands; existing land uses in the arcs are mission necessary functions generally consisting of industrial and maintenance operations.

4. Environmental Consequences

This section of the EA assesses potential environmental consequences associated with the Proposed Action. Potential impacts are addressed in the context of the scope of the Proposed Action as described in Section 2.0 and in consideration of the potentially affected environment as characterized in Section 3.0.

4.1 Air Quality

4.1.1 Evaluation Criteria

The potential impacts to local and regional air quality conditions near a proposed Federal action are determined based upon the increases in regulated pollutant emissions relative to existing conditions and ambient air quality. Specifically, the impact in NAAQS "attainment" areas would be considered significant if the net increases in pollutant emissions from the Federal action would result in any one of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard
- Expose sensitive receptors to substantially increased pollutant concentrations
- Represent an increase of ten percent or more in an affected AQCR emissions inventory
- Exceed any significance criteria established a SIP

Impacts to air quality in NAAQS "non-attainment" areas are considered significant if the net changes in project-related pollutant emissions result in any of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard
- Increase the frequency or severity of a violation of any ambient air quality standard
- Delay the attainment of any standard or other milestone contained in the SIP

With respect to the General Conformity Rule, impacts to air quality would be considered significant if the proposed Federal action would result in an increase of a non-attainment or maintenance area's emission inventory by ten percent or more for one or more non-attainment pollutants, or if such emissions exceed *de minimis* threshold levels established in 40 CFR 93.153(b) for individual non-attainment pollutants or for pollutants for which the area has been re-designated as a maintenance area.

The *de minimis* threshold emission rates were established by USEPA in the General Conformity Rule in order to focus analysis requirements on those Federal actions with the potential to have "significant" air quality impacts. Table 4-1 presents these thresholds, by regulated pollutant. These *de minimis* thresholds are similar, in most cases, to the definitions for major stationary sources of criteria and precursors to criteria pollutants under the CAA's New Source Review (NSR) Program (CAA Title I). As shown in Table 4-1, *de minimis* thresholds vary depending upon the severity of the non-attainment area classification.

Table 4-1. Conformity *De Minimis* Emission Thresholds

Pollutant	Status	Classification	*De minimis* Limit (tpy)
Ozone (measured as Nitrogen Oxides (NO_x) or Volatile Organic Compounds (VOCs))	Non-attainment	Extreme	10
		Severe	25
		Serious	50
		Moderate/marginal (inside ozone transport region)	50 (VOCs)/100 (NO_x)
		All others	100
	Maintenance	Inside ozone transport region	50 (VOCs)/100 (NO_x)
		Outside ozone transport region	100
Carbon Monoxide (CO)	Non-attainment/ maintenance	All	100
Particulate Matter (PM_{10})	Non-attainment/ maintenance	Serious	70
		Moderate	100
		Not Applicable	100
Sulfur Dioxide (SO_2)	Non-attainment/ maintenance	Not Applicable	100
Nitrogen Oxides (NO_x)	Non-attainment/ maintenance	Not Applicable	100

Source: USAF 1995

In addition to the *de minimis* emission thresholds, Federal prevention of significant deterioration (PSD) regulations define air pollutant emissions to be significant if the source is within 10 kilometers of any Class I area, and emissions would cause an increase in the concentration of any regulated pollutant in the Class I area of 1 $\mu g/m^3$ or more (40 CFR 52.21(b)(23)(iii)).

4.1.2 Environmental Consequences

Dover AFB is located within Kent County in the Metropolitan Philadelphia Interstate AQCR No. 45. The geographic area of AQCR No. 45 approximately coincides with the geographic area designated by USEPA as the of the Philadelphia-Wilmington-Trenton Ozone Non-attainment area. This area has been categorized by the USEPA as a "severe" non-attainment area for ozone. AQCR No. 45 is in attainment for all other criteria pollutants.

No long-term air quality impacts are expected from the Proposed Action. Regulated pollutant emissions from the Proposed Action would not contribute to or affect local or regional attainment status with NAAQS. The Proposed Action would generate air pollutant emissions as a result of grading, filling, compacting, and paving operations, but these emissions would be temporary and would not be expected to generate any off-site impacts.

The Proposed Action would not cause or contribute to any violation of any ambient air quality standard. Construction activities would generate total suspended particulate (TSP) and PM_{10} emissions as fugitive dust from ground disturbing activities (e.g., grading, demolition, soil piles, unpaved roads, etc.) and combustion of fuels in construction equipment. Fugitive dust emissions would be greatest during the initial site preparation activities and would vary from day-to-day depending on the construction phase, level of activity, and prevailing weather conditions. The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of construction activity.

Construction activities would result in emissions of criteria pollutants as combustion products from construction equipment as well as evaporative emissions from architectural coatings and asphalt paving operations and would be of a temporary nature.

During construction, emissions from the Proposed Action would produce slightly elevated short-term PM_{10} ambient air concentrations. However, the effects would be temporary and would fall off rapidly with distance from the proposed construction site.

4.2 Geological Resources

4.2.1 Evaluation Criteria

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential impacts of a

proposed action on geological resources. Generally, impacts can be avoided or minimized if proper construction techniques, erosion control measures, and structural engineering design are incorporated into project development.

Analysis of potential impacts on geological resources typically includes the following evaluation tools:

- Identification and description of resources that could potentially be affected
- Examination of a proposed action and the potential effects this action may have on the resource
- Assessment of the significance of potential impacts
- Provision of mitigation measures in the event that potentially significant impacts are identified

4.2.2 Potential Impacts

Under the Proposed Action, construction activities, such as grading, excavation, and re-contouring of the soil, would result in soil disturbance. Implementation of best management practices during construction would limit potential impacts resulting from construction activities. Fugitive dust from construction activities would be minimized by watering and soil stockpiling, thereby reducing to negligible levels the total amount of soil exposed. Standard erosion control means (silt fencing, sediment traps, application of water sprays, and re-vegetation at disturbed areas) would also reduce potential impacts related to those characteristics. A Delaware Department of Natural Resources and Environmental Control- (DNREC) approved sediment and erosion control plan would be required. Therefore, impacts on soils at the installation would not be significant.

The Proposed Action would not cause or create significant changes to the topography of the Dover AFB area. Therefore, no significant impact on regional or local topography or physiographic features would result from implementation of the Proposed Action.

4.3 Water Resources

4.3.1 Evaluation Criteria

Significance criteria for water resources impacts are based on water availability, quality, and use; existence of floodplains; and associated regulations. A potential impact on water resources would be significant if it were to reduce water availability to existing users or interfere with the supply;

create or contribute to overdraft of groundwater basins or exceed safe annual yield of water supply sources; adversely affect water quality or endanger public health by creating or worsening adverse health hazard conditions; threaten or damage unique hydrologic characteristics; or violate established laws or regulations that have been adopted to protect or manage water resources of an area. The impact of flood hazards on a proposed action is significant if such an action is proposed in an area with a high probability of flooding.

4.3.2 Potential Impacts

Implementation of the Proposed Action is expected to have no adverse effects on water quality. The Proposed Action would cumulatively increase the impervious surface area and runoff on the installation. Adherence to proper engineering practices and applicable codes and ordinances would reduce storm water runoff-related impacts to a level of insignificance. Erosion and sediment controls would be in place during construction to reduce and control siltation or erosion impacts to areas outside of the construction site. A DNREC-approved sediment and erosion control plan would be required.

None of the activities associated with the Proposed Action would affect groundwater quality. The facility is designed to be slab-on-grade construction and intrusion into the subgrade would be minimal.

4.4 Biological Resources

4.4.1 Evaluation Criteria

Determination of significance potential impact on biological resources is based on the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource; the percentage of the resource that would be affected relative to its occurrence in the region; the sensitivity of the resource to proposed activities; and the duration of ecological ramifications. Impacts on biological resources are significant if species or habitats of high concern are adversely affected over relatively large areas, or if disturbances cause reductions in population size or impact the distribution of a species of high concern.

The significance of impacts on wetland resources is proportional to the functions and values of the wetland complex. Wetlands function as habitat for plant and wildlife populations, including threatened and endangered species that depend on wetlands for their survival. Wetlands are

valuable to the public for flood mitigation, storm water runoff abatement, aquifer recharge, water-quality improvement, and aesthetics. On a global scale, wetlands are significant factors in the nitrogen, sulfur, methane, and carbon dioxide cycles. These parameters vary from year to year or from season to season. Quantification of wetlands functions and values, therefore, is based on the ecological quality of the site as compared with similar sites, and the comparison of the economic value of the habitat with the economic value of the proposed activity that would modify it. A significant adverse impact on wetlands would occur should either the major function or value of the wetland be significantly altered.

4.4.2 Environmental Consequences

Vegetation. The Proposed Action would occur in areas of Dover AFB that are improved. The proposed construction would occur on mowed fields and would not disturb any native vegetation. Mature trees and shrubbery would be located and identified prior to construction. Measures would be taken to avoid impacts to mature trees and shrubs of importance. Therefore, the Proposed Action would not adversely impact native vegetation on Dover AFB.

Wetlands. Freshwater wetlands in Delaware are regulated by the DNREC, Division of Water Resources under Section 401 of the CWA and the USACE under Section 404 of the CWA (DAFB 2001). The permit provided by the State under Section 401 is generally referred to as a 401 Water Quality Certification. The Proposed Action would directly affect less than 0.10 acres of wetlands in proximity to the South Gate (See Figure 4-1). As such, activities associated with the Proposed Action would be covered under the Nationwide Permit (NWP) Program (33 CFR 330). NWPs are a type of general permit issued by the USACE Chief of Engineers and are "designed to regulate with little, if any, delay or paperwork certain activities having minimal impacts" (33 CFR 330.1). Two or more NWPs can be combined to authorize a project (33 CFR 330.6(c)). The construction activities associated with the South Gate could be covered under one or a combination of the following NWPs: NWP 14 – Linear Transportation Projects, NWP 18 – Minor Discharges, or NWP 25 – Structural Discharges. Application of these NWPs require adherence to several NWP Program General Conditions and NWP Regional Conditions issued by the USACE Philadelphia District Engineer (DE). Use of NWPs 14, 18, or 25 require submittal of a preconstruction notice to the DE. As part of the Regional Conditions, coordination with USFWS, National Marine Fisheries Service, SHPO, DNREC, and the Delaware Natural Heritage Program is required. A list of these agencies appears in Appendix A.

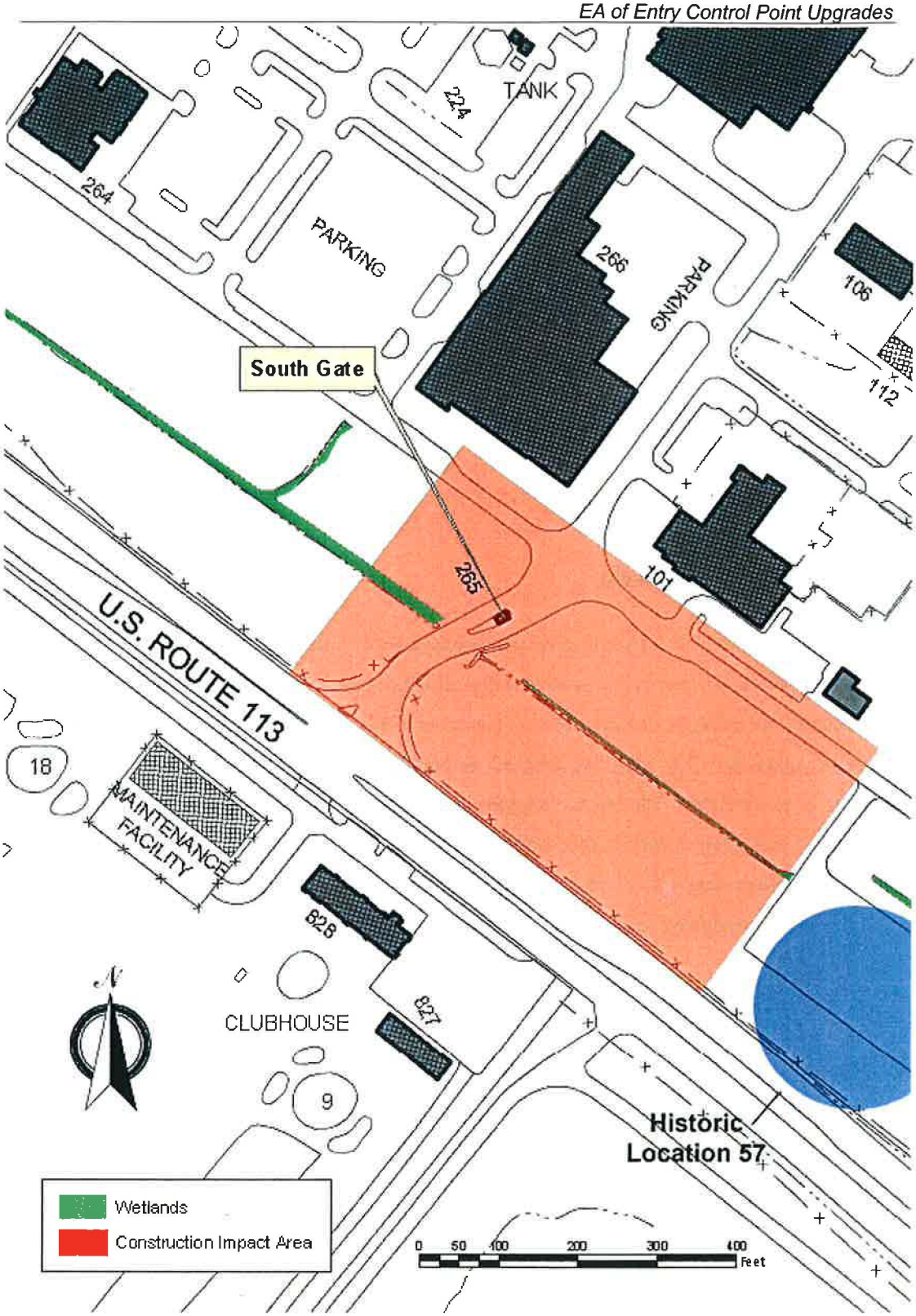

Figure 4-1. Natural Resources Constraints at Dover AFB

No work would begin near the South Gate until the DE approves the use of the appropriate NWP(s). In addition, DNREC has no requirement for Section 401 Water Quality Certification when activities are covered by a NWP. As previously stated, NWPs permit only apply to those activities having minimal impacts. Therefore, the Proposed Action would not result in adverse impacts to wetlands on Dover AFB.

Threatened and Endangered Species. There are no known occurrences of federally listed threatened and endangered species on Dover AFB. Therefore, the Proposed Action is not likely to adversely affect threatened or endangered species on Dover AFB. Additionally, no rare state plant or animal species have been identified in the proposed construction sites. Therefore, the Proposed Action is not likely to affect rare state species.

4.5 Cultural Resources

4.5.1 Evaluation Criteria

Potential impacts of the Proposed Action are assessed by: (1) identifying the nature and potential significance of cultural resources in potentially affected areas, and (2) identifying activities that could directly or indirectly affect cultural resources classified as historic properties. Historic properties, under 36 CFR 800, are defined as cultural resources included in, or eligible for inclusion in the NRHP. The term "eligible for inclusion" includes both listed and eligible properties, which meet NRHP listing criteria as outlined by 36 CFR 60.4. Therefore, cultural resources not yet evaluated are considered potentially eligible for the NRHP and are afforded the same regulatory consideration as nominated historic properties.

4.5.2 Environmental Consequences

The primary potential impacts to cultural resources at Dover AFB would be related to direct and indirect impacts from ground disturbing activities associated with the proposed construction of an ECP at the South Gate. Impacts of the Proposed Action on cultural resources would be considered significant if activities or undertakings would directly or indirectly impact historic properties.

Archaeological Resources. The proposed construction at the South Gate is in the vicinity of Historic Location 57. Historic Location 57 is located underneath U.S. 113, the Long Term Parking Lot, just south of the proposed South Gate construction (See Figure 4-1) (DAFB 200a).

The design concept of the proposed construction indicates that the long-term parking lot and thus Historic Location 57 would not be affected. Because of the proximity of the proposed construction site to Historic Location 57, the 436 AW would conduct an archaeological survey prior to construction. As stated in a letter to the SHPO dated September 11, 2003, the survey would be coordinated with the SHPO (Appendix A). Recommendations received from the SHPO would be included as part of the final design for the South Gate.

This area of the base constitutes the highly developed "Industrial Area" of the base where examination of construction records did not provide definitive evidence that the location had been destroyed. The earliest map evidence for the location is the 1899 USGS topographic map. A 1958 profile shows that the finished grade following the paving of the apron was approximately 25 feet wide and 8 ft deep. Two shovel test pits (STPs) (STP 1500 and 1501) were excavated near Location 57. Test 1500 contained silt subsoil and STP 1501 contained 50 cm of fill over silt. There was a single piece of redware in the fill in STP 1501—the only artifact recovered from the Industrial Area. The results of these tests suggest that a remnant of Location 57 may survive underneath the parking lot and in the open area between the parking lot and the highway and that the area should receive further investigation (DAFB 2000a).

If unanticipated American Indian human remains, funerary objects, sacred objects, or objects of cultural patrimony are found on Dover AFB, the CRM would contact the SHPO to determine the appropriate American Indian groups to consult (DAFB 2000a).

In case of inadvertent discovery of archaeological artifacts during construction, all construction activities would cease, as required by Federal and USAF regulations and 36 CFR 800.13(b). Procedures outlined in Dover AFB's CRMP would be followed. All construction would cease, and the CRM would be notified. Work would not resume until a full archaeological investigation is completed.

Historical Resources. Building 265 that is proposed for demolition under the Proposed Action is not eligible for nomination to the NRHP (DAFB 2000a). Therefore, the Proposed Action would have no effect on historic properties.

Pursuant to 36 CFR 800.3, Dover AFB initiated coordination with the SHPO regarding the Proposed Action on September 16, 2003 (Appendix A). Pursuant to 800.4(d)(1), Dover AFB determined that there are no historic properties within the area of impact and that the Proposed Action would not affect historic properties.

4.6 Hazardous Materials and Wastes

4.6.1 Evaluation Criteria

Numerous local, state, and Federal laws regulate the storage, handling, disposal, and transportation of hazardous material and waste. The primary purpose of these laws is to protect public health and the environment. Potential impacts associated with hazardous material and waste would be significant if the storage, use, transportation, or disposal of these substances were to substantially increase the risk to human health or exposure to the environment.

4.6.2 Environmental Consequences

Hazardous Materials. Construction activities associated with the Proposed Action would require the use of certain hazardous materials such as paints, welding gases, solvents, preservatives, and sealants. It is anticipated that the quantity of products containing hazardous materials used during the construction of the ECPs would be minimal and their use would be of short duration. Contractors would be responsible for the management of hazardous materials, which would be handled in accordance with Federal and state regulations. Therefore, hazardous materials management at Dover AFB would not be impacted by the proposed construction activities.

Hazardous Wastes. It is anticipated that the quantity of hazardous wastes generated from proposed construction activities would be negligible. Dover AFB would coordinate with the contractors for the handling and disposal of hazardous wastes generated by the proposed project. Typically, hazardous waste is given a Dover AFB generator number and is disposed directly by the base. All hazardous wastes would be disposed in accordance with Federal and state laws and regulations. Therefore, construction of the proposed facilities would have negligible impacts on Dover AFB hazardous waste management program.

Asbestos and Lead-based Paint. Any ACM or LBP encountered during demolition of buildings would be handled in accordance with established USAF policy and the Asbestos Management Program or Lead Based Paint Management Program. Gatehouse 265 which is proposed for demolition at the South Gate is suspected to have ACM and LBP. USAF regulations prohibit the use of ACM and LBP for new construction. Specifications for new facilities would be in accordance with the USAF policies and regulations.

Environmental Restoration Program. ERP monitoring wells may occur within the proposed construction sites at the North and South Gates. Access would be provided to any monitoring wells that fall within the construction impact area. All efforts would be coordinated with 436 CES/CEV. No other ERP management impacts would be expected.

Pollution Prevention. It is anticipated that the Proposed Action would not impact the pollution prevention program at Dover AFB. Quantities of hazardous material and chemical purchases, off-base transport of hazardous waste, disposal of municipal solid waste (MSW), and energy consumption would remain unchanged under with implementation of the Proposed Action. The Pollution Prevention Program at Dover AFB would accommodate the Proposed Action.

4.7 Infrastructure and Utilities

4.7.1 Evaluation Criteria

Impacts to infrastructure are evaluated on their potential for disruption or improvement of existing levels of service and additional needs for energy and water consumption, wastewater systems, and transportation patterns and circulation. Impacts may arise from physical changes to circulation, construction activities, introduction of construction-related traffic on local roads or changes in daily or peak-hour traffic volumes, and energy needs created by either direct or indirect workforce and population changes related to base activities.

4.7.2 Environmental Consequences

Electrical Power. The Proposed Action would not result in any changes to Dover AFB electrical power. Therefore, implementation of the Proposed Action at Dover AFB would not impact the electrical power at the base.

Solid Waste. In considering the basis for evaluating the significance of impacts on solid waste, several items are considered. These items include evaluating the degree to which the proposed construction projects could affect the existing solid waste management program and capacity of the area landfill.

Solid waste generated from the proposed construction activities would consist of building materials such as solid pieces of concrete, metals (conduit, piping, and wiring), and lumber. All materials that can be recycled will be sent to the Resource Re-use and Recovery Program building on base. All materials that cannot be recycled will be sent to the Sandtown landfill. The

landfill space required at the DSWA landfill in Sandtown, DE or another approved landfill used by the contractor would increase over the next two years (Calendar Year [CY] 2003 to CY 2004). The DSWA landfill has the capacity to handle the additional construction and demolition solid waste stream from the Proposed Action. Therefore, implementation of the Proposed Action at Dover AFB would not impact the solid waste management program at the base or the capacity of the DSWA landfill in Sandtown, DE.

Transportation Systems. The construction and demolition phase of the Proposed Action would require delivery of materials to and removal of debris from construction sites. Construction traffic would comprise a small percentage of the total existing traffic and many of the vehicles would be driven to and kept on-site for the duration of construction and demolition, resulting in relatively few additional trips. Furthermore, potential increases in traffic volume associated with proposed construction activity would be temporary. Heavy vehicles are frequently on base roads. Therefore the construction vehicles necessary for construction are not expected to have a heavy impact on base roads. All road and lane closures would be coordinated with 436th Transportation Squadron and would be temporary in nature; therefore, no adverse impacts on transportation systems would be expected.

4.8 Safety

4.8.1 Evaluation Criteria

If implementation of the Proposed Action were to increase substantially risks associated with the safety of Dover AFB personnel, contractors, or the local community, or substantially hinder the ability to respond to an emergency, it would represent a significant impact. Furthermore, if implementation of the Proposed Action would result in incompatible land use with regard to safety criteria (e.g., height restrictions), impacts to safety would be significant. Impacts were assessed based on the potential effects of construction and demolition activities.

4.8.2 Environmental Consequences

Short-term, minor adverse effects would be expected. Implementation of the Proposed Action would slightly increase the short-term risk associated with construction contractors performing work at Dover AFB during the normal workday because the level of such activity would increase. Contractors would be required to establish and maintain safety programs. Projects associated with the Proposed Action would not pose a safety risk to base personnel or activities at the base.

The proposed construction projects would enable 436 AW to meet future mission objectives at the base and conduct or meet mission requirements in a safe operating environment.

The Proposed Action would provide a positive impact to the base. Improving the security and upgrading the safety requirements at the main gates of Dover AFB would reduce the potential of a terrorist attack and harm to base personnel and facilities.

4.9 No Action Alternative

Under the No Action Alternative, existing conditions would remain as is and none of the proposed projects would occur. If the No Action Alternative were carried forward, there would be no change in or effects on air quality, geological resources, water resources, biological resources (including wetlands and threatened and endangered species), cultural resources, hazardous materials and waste, or infrastructure and utilities at Dover AFB. However, safety of base personnel and visitors could be compromised. If the No Action Alternative were implemented, ECPs to Dover AFB would be susceptible to potential terrorist attacks.

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5. Cumulative and Adverse Impacts

Cumulative impacts on environmental resources result from incremental effects of proposed actions, when combined with other past, present, and reasonably foreseeable future projects in the area. Cumulative impacts can result from individually minor, but collectively substantial, actions undertaken over a period of time by various agencies (Federal, state, and local) or individuals. Informed decision-making is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future..

During the timeframe of the Proposed Action, 436 AW would be demolishing three other buildings and making improvements to the east-west airfield. No significant impacts to the environment are anticipated from the Proposed Action in conjunction with these projects.

5.1 Unavoidable Adverse Impacts

Unavoidable adverse impacts would result from implementation of the Proposed Action. None of these impacts would be significant.

Geological Resources. Under the Proposed Action, construction activities, such as grading, excavating, and recontouring of the soil, would result in soil disturbance. Implementation of best management practices during construction would limit potential impacts resulting from construction activities. Standard erosion control means would also reduce potential impacts related to these characteristics. Although unavoidable, impacts on soils at the base are not considered significant.

Hazardous Materials and Waste. The generation of hazardous materials and wastes are unavoidable conditions associated with the Proposed Action. However, the potential for these unavoidable situations would not significantly increase over baseline conditions and, therefore, are not considered significant.

Energy. The use of nonrenewable resources is an unavoidable occurrence, although not considered significant. The Proposed Action would require the use of fossil fuels, a nonrenewable natural resource. Energy supplies, although relatively small, would be committed to the Proposed Action or No Action Alternative.

5.2 Compatibility of the Proposed Action and Alternatives with the Objectives of Federal, Regional, State, and Local Land Use Plans, Polices, and Controls

Under existing conditions the only access to the South Gate is via the north-bound lane of U.S. 113. As such, the Proposed Action includes the construction of an improved turnaround capacity for trucks approaching South Gate on south-bound U.S. 113. The proposed construction would be sited according to existing land use zones. Consequently, construction activities would not be in conflict with base land use policies or objectives. All construction and signaling changes proposed for U.S. Route 113 would be coordinated with the Delaware Department of Transportation, Division of Transportation Solutions, Traffic Management Control and Project Development Sections (Donaldson 2003) (Hite 2003). Additionally, the Proposed Action would not conflict with any applicable off-base land use ordinances or designated clear zones.

If the proposed South Gate construction proceeds without the improved turnaround capacity for trucks on south-bound U.S. 113, the Proposed Action may have increase traffic on roads that are utilized by visitors to the historical properties John Dickenson Plantation and Homestead Property. However, under the current design concept for the Proposed Action, no increase in traffic is anticipated.

5.3 Relationship Between Short-term Use and Long-term Productivity

Short-term uses of the biophysical components of man's environment include direct construction-related disturbances and direct impacts associated with an increase in population and activity that occurs over a period of less than five years. Long-term uses of man's environment include those impacts occurring over a period of more than five years, including permanent resource loss.

Several kinds of activities could result in short-term resource uses that compromise long-term productivity. Filling of wetlands or loss of other especially important habitats and consumptive use of high-quality water at nonrenewable rates are examples of actions that affect long-term productivity.

The Proposed Action would not result in an intensification of land use at Dover AFB or in the surrounding area. Development of the Proposed Action would not represent a significant loss of open space. The sites are designated as ECPs to the base and were not planned for use as open space. Therefore, it is anticipated that the Proposed Action would not result in any cumulative

land use or aesthetic impacts. Long-term productivity of these sites would be increased by the development of the Proposed Action.

5.4 Irreversible and Irretrievable Commitments of Resources

The irreversible environmental changes that would result from implementation of the Proposed Action involve the consumption of material resources, energy resources, land, biological habitat, and human resources. The use of these resources is considered to be permanent.

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that use of these resources will have on future generations. Irreversible effects primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable time frame (e.g., energy and minerals).

Material Resources. Material resources utilized for the Proposed Action include building materials (for construction of facilities), concrete and asphalt (for roads), and various material supplies (for infrastructure). Most of the materials that would be consumed are not in short supply, would not limit other unrelated construction activities, and would not be considered significant.

Energy Resources. Energy resources utilized for the Proposed Action would be irretrievably lost. These include petroleum-based products (such as gasoline and diesel), natural gas, and electricity. During construction, gasoline and diesel would be used for the operation of construction vehicles. During operation, gasoline would be used for the operation of private and government-owned vehicles. Natural gas and electricity would be used by operational activities. Consumption of these energy resources would not place a significant demand on their availability in the region. Therefore, no significant impacts would be expected.

Biological Habitat. The Proposed Action would result in a minimal loss of vegetation and wildlife habitat on proposed construction sites. Proposed construction is mostly occurring on already disturbed land. As described in Section 404 of the CWA, the loss of wetlands would be mitigated through creating new wetlands or enhancing existing wetlands on a ration determined by USACE.

Human Resources. The use of human resources for construction and operation is considered an irretrievable loss, only in that it would preclude such personnel from engaging in other work

activities. However, the use of human resources for the Proposed Action represents employment opportunities, and is considered beneficial.

6. List of Preparers

This EA has been prepared under the direction of Dover AFB. The individuals who contributed to the preparation of this document are listed below.

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7. References

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APPENDIX A

AGENCY CORRESPONDENCE

LIST OF CORRESPONDENCE REQUIRED FOR THE NATIONWIDE WETLANDS PERMIT APPLICATION

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DEPARTMENT OF THE AIR FORCE
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PRESERVATION OFFICE
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436 CES/CEV
600 Chevron Avenue
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Mr. Daniel R. Griffith
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Dover DE 19901

Dear Mr. Griffith

Dover AFB is proposing to reconfigure the three entrance gates to meet new anti-terrorism standards. The conceptual plans for all three gates do not impact any sites requiring additional archeological work as identified in our Cultural Resources Management Plan. An environmental assessment and subsequent Finding of No Signficant Impact (FONSI) was prepared for the North and Main Gates while a FONSI/Finding of No Practical Alternative (FONPA) was prepared for the South Gate. A FONPA was required for the South Gate due to the presence of a man-made drainage ditch that is classified as wetlands. Appropriate regulatory permits associated with the wetlands will be obtained during the design phase of the South Gate.

Upon reviewing our Cultural Resources Management Plan during the drafting of the environmental assessment, we discovered an area identified as Historic Location 57 located underneath U.S. Route 113 and the Dover AFB Long Term Parking Lot. Although the location will not be impacted by the South Gate reconfiguration, Dover AFB would like to pursue the noted additional investigation as outlined in our Cultural Resources Management Plan.

Our prime contractor for this endeavor is engineering-environmental Management Incorporated (e2M). e2M has contracted with Christopher Goodwin and Associates to perform the requirements associated with investigating Historic Location 57. We would like to set up an initial consultation meeting with your office and our contractor at your earliest convenience. An individual from e2M will likely contact you in the near future to introduce the company and set up a site visit.

If you have any questions, please contact Mr. Steve Seip at (302) 677-6839 or Ms. Rayanne Benner at (302) 677-6849.

Sincerely

CHARLES C. MIKULA, P.E.
Environmental Flight Chief

Attachment:
Map Indicating Historic Location 57

OPTIONAL FORM 99 (7-90)

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To Brian Happy	From Steve Seip
Dept./Agency e2m	Phone # (302) 677-6839
Fax # (210) 568-2272	Fax # (302) 677-6837

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600 Chevron Avenue
Dover AFB DE 19902-5600

Mr. Daniel R. Griffith
State Historic Preservation Officer
Delaware Department of State
Division of Historical and Cultural Affairs, Historic Preservation Office
#21 The Green, Suite A
Dover DE 19901

Dear Mr. Griffith

Pursuant to 36 CFR 800.3, this letter is to initiate consultation with your office regarding the Dover AFB proposal to reconfigure the three entrance gates to meet new anti-terrorism standards. The conceptual plan for all three gates indicates that proposed construction would not impact any sites requiring additional archaeological work as identified in our Cultural Resources Management Plan (CRMP), which was prepared by Parsons Engineering in 2000 and the archeological assessment conducted in association with the Dover AFB Installation Restoration Program in 1996. Both reports indicate these areas as having been disturbed to the level requiring no further archeological investigations. Included as attachment 1 is an excerpt from a previously drafted programmatic agreement within the Dover AFB CRMP which indicates those areas requiring additional archeological work. Dover AFB will pursue such an agreement to minimize your staff's time in requiring a review of all subsequent Dover AFB projects.

Also, attachment 1 does indicate the presence of a site, titled Historic Location 57, in the vicinity of the South Gate, however, not within the area included in the conceptually designed reconfiguration. Specifically, Historic Location 57 is located underneath U.S. Route 113 and the Dover AFB Long Term Parking Lot. As indicated in our September 11, 2003 letter, we are pursuing additional investigation of Historic Location 57. Our prime contractor for this endeavor, engineering-environmental Management, Inc. (e2M), will contact you for further coordination on this matter. The September 11, 2003 correspondence did mention the drafting of a Finding of No Practical Alternative (FONPA) associated with the reconfiguration of the South Gate. A FONPA is required due to the potential disturbance associated with the man-made drainage ditch which traverses through the area near the South Gate. The man-made drainage ditch is

classified as a wetland. When the design phase is more detailed, we will pursue the appropriate regulatory permits associated with the wetlands. For your information, we have enclosed a copy of the environmental assessment, FONPA and the Finding of No Significant Impact (FONSI). Due to security reasons, some of the information in the document is not readable. After reviewing the data available regarding the three gates, it is our determination that there will be no effect on historic properties, cultural resources, and/or archaeological resources.

If you have any question please contact Mr. Steven Seip at (302) 677-6839 or Ms. Rayanne Benner at (302) 677-6849.

Sincerely

CHARLES C. MIKULA, P.E.
Environmental Flight Chief

Attachments:
1. Excerpt from Dover AFB CRMP - areas requiring additional archeological work
2. Environmental Assessment/FONSI/FONPA
3. Conceptual Designs for Three Gates