ENVIRONMENTAL ASSESSMENT

RELOCATION OF JOINT MUNITIONS STORAGE AREA

Final

113th Civil Engineer Squadron
316th Civil Engineer Squadron

Andrews Air Force Base, Maryland

U.S. AIR FORCE

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FINDING OF NO SIGNIFICANT IMPACT
Environmental Assessment
Relocation of Joint Munitions Storage Area
113th Civil Engineer Squadron and 316th Civil Engineer Squadron
Andrews Air Force Base, Maryland

INTRODUCTION

The Environmental Assessment (EA) for relocation of the munitions storage area (MSA) at Andrews Air Force Base (AFB), Maryland was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations (CFR) § 1500-1508), and the Air Force Environmental Impact Analysis Process (32 CFR § 989). The EA analyzes potential environmental consequences from implementation of three alternatives, including the no action alternative. Alternatives to retrofit the current MSA and to relocate the MSA off base were considered but eliminated from further consideration. These alternatives were rejected because of the current MSA site limitations, they would require operation of additional MSA facilities, they would not allow for immediate access to munitions in fulfillment of the mission at Andrews AFB, and failure to meet other alternatives selection criteria. The EA is on file at Andrews AFB and is incorporated by reference.

The existing MSA was built in the 1950s. Current and new mission requirements have exceeded the design limits of the current MSA. Additionally, potential quantity distance (QD) violations limit the amount and type of munitions that can be stored in the MSA. The current MSA is operating under numerous safety waivers obtained from the Department of Defense (DoD) Explosive Safety Board (ESB).

The purpose of the proposed action is to construct a new joint MSA that meets storage and QD requirements specified in Air Force Manual 91-201, Explosive Safety Standards; Air Force Handbook 32-1084, Standard Facility Requirements; and other DoD ESB guidelines. The need for a new MSA is to provide proper storage space for an assortment of munitions needed to maintain mission requirements. The proposed action would provide safe and more efficient explosives handling and storage capabilities. Replacing the current MSA would remove all current safety waivers and provide adequate storage space for current mission requirements. The proposed action is the key element to the overall revitalization and development of the munitions storage at Andrews AFB.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

The 113th Wing of the District of Columbia Air National Guard (DCANG) and 316th Wing propose to relocate the joint MSA at Andrews AFB starting in Fiscal Year 2010. Both Civil Engineer Squadrons (113 CES and 316 CES) are proposing to construct the new MSA.

PROPOSED ACTION

The 113 CES and 316 CES are proposing to construct five different types of facilities on the new MSA site at Andrews AFB and demolish the existing MSA facilities. The proposed new facilities are Munitions Administration, Maintenance and Inspection, Inert Storage and Trailer Maintenance, Above Ground Multi-Cubicle Magazine Storage, and Munitions Storage Igloos. The MSA would be relocated

from a high land use area to a relatively unused portion of the base. A properly sited, adequately sized, and correctly configured MSA is required to support the mission at Andrews AFB.

The project siting area for construction of the new MSA is approximately 38 acres and the proposed action footprint of buildings and road/parking surfaces covers approximately 7.1 acres. The proposed site for the new MSA does not contain utilities and roads; therefore, the proposed activities would include development of an access road, utility systems, communications systems, intrusion detection system, security fencing, and security lighting.

The 316 CES is proposing to demolish the eight buildings in the current MSA after construction of the new MSA. Following demolition and removal of debris, the site would be restored to vegetative cover compatible with airfield operations and adjacent land uses.

Alternative 1 (Construct New MSA and Reuse Existing MSA)

Under this alternative, the new MSA would be relocated and constructed as specified for the proposed action. Eight buildings in the current MSA would be available for reuse after construction of the new MSA. These 1950's buildings would require extensive renovation to update the facilities for personnel offices and energy efficiency. The mini storage warehouse configuration of the magazine storage areas (concrete walls, ceiling, and floors with a sliding garage-type door opening) would not be desirable for conversion to personnel uses. Appropriate uses of the current buildings without extensive renovation would be general storage and warehousing of miscellaneous equipment. This type of reuse would not require personnel located onsite and daily activities at the site. Authorization of acceptable contaminant risks from the Environmental Restoration Program (ERP) Office at Andrews AFB would be required prior to reuse of the current MSA buildings.

No Action Alternative

Under the no action alternative, the MSA would not be relocated and there would continue to be a shortfall of munitions storage capacity for mission support at Andrews AFB. Existing munitions would continue to be sited closer to existing and planned facilities than allowed by DoD ESB, resulting in QD violations. Surrounding facilities and base personnel would continue to be endangered by the current MSA, requiring numerous DoD ESB waivers.

SUMMARY OF FINDINGS

The proposed action would replace aging and inadequate buildings that are currently used for munitions storage with modern facilities that provide sufficient storage space and adequate protection for personnel operating the facilities. In addition relocating the MSA to an undeveloped area of the base would improve base safety by eliminating the current requirement for QD waivers and reducing the transport of munitions over the road network at Andrews AFB.

Potential impacts (short-term, long-term, or cumulative) from implementation of the proposed action and alternative to the resources evaluated would not be significant. Emissions of air pollutants would be *de minimis*; there would be no change to the noise, visual, or socioeconomic environment; and the proposed activities would be consistent with land use plans. No impacts to geology and topography would be expected; no wetlands would be filled. Temporary and minor impacts to soil and water resources would

be expected from grading and impervious installations. No impacts would be expected to vegetation and forests or wildlife populations, including migratory birds, because of the small acreage of the proposed action and absence of rare habitats or threatened or endangered species. An archeological survey of the APE in March of 2008 (Markell et al. 2008) indicates that potential impacts to cultural resources at the new MSA site are not significant. The proposed action would be implemented in accordance with applicable state and federal regulations to avoid potential impacts to hazardous materials and wastes.

CONCLUSION

In accordance with the CEQ regulations implementing NEPA and the Air Force Environmental Impact Analysis Process (32 CFR 989), I conclude that the proposed action will have no significant impact on the quality of the human environment and that the preparation of an environmental impact statement is not warranted.

ERIC A. SNADECKI, Colonel, USAF
Vice Commander, 316th Wing

OCT 07 2008
Date

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EXECUTIVE SUMMARY

Environmental Assessment
Relocation of Joint Munitions Storage Area
113th Civil Engineer Squadron and 316th Civil Engineer Squadron
Andrews Air Force Base, Maryland

Introduction

This Environmental Assessment (EA) for relocation of the munitions storage area (MSA) at Andrews Air Force Base (AFB), Maryland was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations (CFR) § 1500-1508), and the Air Force Environmental Impact Analysis Process (32 CFR § 989). This EA analyzes potential environmental consequences from implementation of three alternatives, including the no action alternative. Alternatives to retrofit the current MSA and to relocate the MSA off base were considered but eliminated from further consideration. These alternatives were rejected because of the current MSA site limitations, they would require operation of additional MSA facilities, they would not allow for immediate access to munitions in fulfillment of the mission at Andrews AFB, and failure to meet other alternatives selection criteria.

The existing MSA was built in the 1950s. Current and new mission requirements have exceeded the design limits of the current MSA. Additionally, potential quantity distance (QD) violations limit the amount and type of munitions that can be stored in the MSA. The current MSA is operating under numerous safety waivers obtained from the Department of Defense (DoD) Explosive Safety Board (ESB).

Purpose and Need

The purpose of the proposed action is to construct a new joint MSA that meets storage and QD requirements specified in Air Force Manual 91-201, Explosive Safety Standards; Air Force Handbook 32-1084, Standard Facility Requirements; and other DoD ESB guidelines. The need for a new MSA is to provide proper storage space for an assortment of munitions needed to maintain mission requirements. The proposed action would provide safe and more efficient explosives handling and storage capabilities. Replacing the current MSA would remove all current safety waivers and provide adequate storage space for current mission requirements. The proposed action is the key element to the overall revitalization and development of the munitions storage at Andrews AFB. Under the proposed action the existing MSA would be relocated from a high land use area to a relatively unused portion of the base, the capacity for munitions storage would be increased, and safety and security concerns would be met.

Proposed Action

The 113th Wing of the District of Columbia Air National Guard (DCANG) and 316th Wing propose to relocate the joint MSA at Andrews AFB starting in Fiscal Year 2010. Both Civil Engineer Squadrons (113 CES and 316 CES) are proposing to construct five different types of facilities for the new MSA and demolish the existing MSA facilities. The proposed new facilities

are Munitions Administration, Maintenance and Inspection, Inert Storage and Trailer Maintenance, Above Ground Multi-Cubicle Magazine Storage, and Munitions Storage Igloos.

The 113 CES is proposing to construct approximately 33,700 square feet (ft^2) of MSA facilities to support the ASA mission and F-16 aircraft training mission at Andrews AFB. The 316 CES is evaluating the Wing request for approximately 24,970 ft^2 of MSA facilities to support base security forces personnel, Office of Special Investigations, State Department personnel, Air Force Explosive Ordnance Disposal Flight, and other supported base organizations. The project siting area is approximately 38 acres in an undeveloped portion of the base. The proposed action footprint of buildings and road/parking surfaces covers approximately 7.1 acres.

The proposed site for the new MSA does not contain utilities and roads; therefore, the proposed activities would include development of an access road, utility systems, communications systems, intrusion detection system, security fencing, and security lighting.

The 316 CES is proposing to demolish the eight buildings (approximately 28,344 ft2) in the current MSA after construction of the new MSA. Following demolition and removal of debris, the site would be restored to vegetative cover compatible with airfield operations and adjacent land uses.

Construct New MSA and Reuse Current MSA for Compatible Uses -Alternative 1

Under this alternative, the new MSA would be relocated and constructed as specified for the proposed action. There would be eight buildings in the current MSA available for reuse after construction and relocation to the new MSA. However, these buildings were constructed in the 1950s and would require extensive renovation to update the facilities for personnel offices and energy efficiency. The mini storage warehouse configuration of the magazine storage areas (concrete walls, ceiling, and floors with a sliding garage-type door opening) would not be desirable for conversion to personnel uses. Appropriate uses of the current buildings without extensive renovation would be general storage and warehousing of miscellaneous equipment. This type of reuse would not require personnel located onsite and daily activities at the site. Authorization of acceptable contaminant risks from the Environmental Restoration Program (ERP) Office at Andrews AFB, as a standard practice to maintain environmental standards on base, would be required prior to reuse of the current MSA buildings.

No Action Alternative

Under the no action alternative, the MSA would not be relocated and there would continue to be a shortfall of munitions storage capacity for support of the alert and training missions at Andrews AFB. Existing munitions would continue be sited closer to existing and planned facilities than allowed by DoD ESB, resulting in QD violations. Surrounding facilities and base personnel would continue to be endangered by the current MSA, requiring numerous waivers from DoD ESB. CEQ regulations stipulate that the no action alternative be analyzed to assess any environmental consequences that may occur if the proposed action is not implemented. Therefore, this alternative will be carried forward with the proposed action and alternative 1 for analysis in the EA.

Summary of Environmental Consequences

The potential impacts to the human and natural environment were evaluated relative to the affected environment. For each environmental resource or issue, anticipated direct and indirect effects were assessed, considering both short- and long-term project effects. The analyses for this EA indicate that the proposed action for construction of a new MSA and demolition or reuse of the existing MSA would not result in, or contribute to, significant negative cumulative impacts to the resources in the region. A summary of potential impacts is presented in Table ES-1.

Table ES-1. Summary of Potential Impacts for Relocation of the Joint Munitions Storage Area at Andrews AFB, Maryland.

Resource Area	Proposed Action	Alternative 1	No Action
Safety	Improve safety conditions for personnel and munitions handling.	Improve safety conditions for personnel and munitions handling.	No change to inadequate safety baseline conditions for munitions storage and handling, QD violations would continue.
Air Quality	Temporary and minor emissions below de minimis levels.	Temporary and minor emissions below de minimis levels.	No change to air quality in the Washington D.C. metropolitan area; designated as moderate nonattainment for ozone and nonattainment for $PM_{2.5}$.
Noise	Temporary and minor impacts during construction and demolition.	Temporary and minor impacts during construction activities.	No change to baseline conditions for noise; day-night noise levels are 65-85 dBA.
Land Use	No change to baseline conditions.	No change to baseline conditions.	No change to land uses to continue the military mission.

Table ES-1. Summary of Potential Impacts for Relocation of the Joint Munitions Storage Area at Andrews AFB, Maryland (cont'd).

Resource Area	Proposed Action	Alternative 1	No Action
Geological Resources	No change to geology and topography. Temporary and minor impacts to soils during construction and demolition activities based on use of Best Management Practices.	No change to geology and topography. Temporary and minor impacts to soils during construction activities based on use of Best Management Practices.	No change to the geology, soils, and topography of the area.
Water Resources	No impacts to groundwater, wetlands, or floodplains. Temporary and minor impacts to surface water from construction and demolition activities based on use of Best Management Practices.	No impacts to groundwater, wetlands, or floodplains. Temporary and minor impacts to surface water from construction activities based on use of Best Management Practices.	No change to surface water, ground water, wetlands, and floodplain on Andrews AFB.
Biological Resources	Minor impacts to vegetation and forests. Temporary and minor impacts to wildlife including migratory birds from construction and demolition activities. No impact to threatened or endangered species.	Minor impacts to vegetation and forests. Temporary and minor impacts to wildlife including migratory birds from construction activities. No impact to threatened or endangered species.	No change to vegetation and forests, wildlife, threatened and endangered species or migratory birds at Andrews AFB.

Table ES-1. Summary of Potential Impacts for Relocation of the Joint Munitions Storage Area at Andrews AFB, Maryland (cont'd).

Resource Area	Proposed Action	Alternative 1	No Action
Transportation and Circulation	Temporary and minor impacts during construction and demolition activities. Beneficial impacts from relocating the MSA closer to the flightline.	Temporary and minor impacts during construction activities. Beneficial impacts from relocating the MSA closer to the flightline.	No change to the vehicular roadway system at Andrews AFB.
Visual Resources	Negligible impacts to the aesthetic qualities at Andrews AFB.	Negligible impacts to the aesthetic qualities at Andrews AFB.	No change to the landscape, water bodies, vegetation, buildings, structures, or roadway features that comprise the aesthetic qualities of Andrews AFB.
Cultural Resources	No potential impacts to archeological resources, for none are present. No impact to architectural resources because old MSA buildings not NRHP eligible.	No potential impacts to archeological resources, for none are present.	No change to archeological or architectural resources at Andrews AFB.
Socioeconomics and Environmental Justice	Minor impacts to socioeconomics of the installation or region. No change to employment or population levels. No impacts to minority populations or low-income populations.	Minor impacts to socioeconomics of the installation or region. No change to employment or population levels. No impacts to minority populations or low-income populations.	No change to the prevailing population, income, employment, housing characteristics, or environmental justice concerns at Andrews AFB.

Table ES-1. Summary of Potential Impacts for Relocation of the Joint Munitions Storage Area at Andrews AFB, Maryland (cont'd).

Resource Area	Proposed Action	Alternative 1	No Action
Hazardous Materials and Wastes	No impacts to human health or environment because use of hazardous materials and generation of wastes during construction and demolition or operations would be handled in accordance with applicable state and federal regulations.	No impacts to human health or environment because use of hazardous materials and generation of wastes during construction and demolition or operations would be handled in accordance with applicable state and federal regulations. The ERP Office at Andrews AFB would investigate historical use and activities prior to reuse of the old MSA buildings to ensure protection of human health and environmental exposure.	No change to hazardous substances, hazardous wastes, or any materials that pose a potential hazard to human health and safety or the environment due to their quantity, concentration, or physical and chemical properties.

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ACRONYMS & ABBREVIATIONS

AC&W	Aircraft Control & Warning
ACHP	Advisory Council on Historic Preservation
ADC	Air Defense Command
AFB	Air Force Base
AFOSH	Air Force Occupational Safety and Health
AICUZ	Air Installation Compatible Use Zone
AMC	Air Mobility Command
ANG	Air National Guard
APE	Area of Potential Effects
ASA	Air Sovereignty Alert Mission
BACP	Base Architectural Compatibility Plan
BMP	best management practice
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CDP	Census Designated Place
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CES	Civil Engineer Squadron
CFR	Code of Federal Regulations
CO	carbon monoxide
COMAR	Code of Maryland Regulations
CWA	Clean Water Act
DCANG	District of Columbia Air National Guard
DNR	Department of Natural Resources
DoD	Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EO	Executive Order
ERP	Environmental Restoration Program
LOS	LOS
ESB	Explosive Safety Board
FONSI	Finding of No Significant Impact

HC/D	hazard class division
ICA	Intergovernmental Coordination Act
ICRMP	Integrated Cultural Resources Management Plan
LOS	levels of service
MAC	Military Airlift Command
MATS	Military Air Transportation Service
MDE	Maryland Department of Environment
MHT	Maryland Historical Trust
MSA	Munitions Storage Area
MSL	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_x	nitrous oxides
NPS	National Park Service
NRHP	National Register of Historic Places
O_3	ozone
Pb	lead
PM_{10}	coarse particulate matter
QD	quantity distance
RCRA	Resource Conservation and Recovery Act
SAGE	Semi-Automated Ground Environment
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_2	sulfur dioxide
UFC	Unified Facilities Code
USAF	U.S. Air Force
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency

1.0 INTRODUCTION

The 113th Wing of the District of Columbia Air National Guard (DCANG) and 316th Wing propose to relocate the joint munitions storage area (MSA) at Andrews Air Force Base (AFB) starting in Fiscal Year 2010. Both Civil Engineer Squadrons (CES) (113 CES and 316 CES) are proposing to construct the new MSA. The MSA would be relocated from a high land use area to a relatively unused portion of the base. A properly sited, adequately sized, and correctly configured MSA is required to support the mission at Andrews AFB. This environmental assessment (EA) presents an analysis of potential impacts that would result from implementation of the proposed action and alternatives.

1.1 BACKGROUND

1.1.1 113th Wing

Andrews AFB has been the home of the 113th Wing since 1946. The 113th Wing includes the 121st Fighter Squadron, 231st Combat Communications Squadron, and the 201st Airlift Squadron. The 113th Wing is capable of worldwide deployment in support of US national interests, provides passenger airlift to the National Guard Bureau, and provides fighter aircraft training and community support in the Washington, D.C. area. The 113 CES is a component of the 113th Mission Support Group at Andrews AFB and provides engineering, environmental, disaster response, and property management. The 113th Wing is tasked with maintaining and staffing an Air Sovereignty Alert (ASA) mission at Andrews AFB.

1.1.2 316th Wing

In accordance with Air Force District of Washington Mission Directive 136, the 316th Wing was activated on 22 June 2006, and is largely comprised of elements transferred from the 89th Airlift Wing at Andrews AFB. The 316th Wing serves as the host wing for Andrews AFB and provides comprehensive installation security, air base services, and airfield management in support of Special Air Mission movement of the President, Vice President, senior leaders, and 50 tenant organizations. The 316 CES is a component of the 316th Mission Support Group at Andrews AFB and provides engineering, fire protection, environmental, housing, disaster response, and property management for Andrews AFB.

1.1.3 Existing MSA

The existing MSA was built in the 1950s and is used by Andrews AFB host and tenant units for training and the storage of munitions, survival devices, base defense munitions, cartridge and propellant actuated devices, war readiness material, and unserviceable munitions. The buildings are low in stature and configured similar to mini storage warehouse units. The footprint of the access roads/parking surfaces and buildings is approximately 7 acres. The administrative/personnel functions building (Bldg. 4972) is inadequate for protecting personnel from explosive operations. The magazine storage areas are located between earthen bunkers and resemble mini storage warehouse units (Figure 1-1).

Figure 1-1. Magazine Storage Area

Current and new mission requirements have exceeded the design limits of the current MSA. Additionally, potential quantity distance (QD) violations associated with the close proximity to the base golf course and inhabited buildings limit the amount and type of hazard class division (HC/D) munitions that can be stored in the MSA. Due to the close proximity of buildings, certain HC/D munitions required for mission support can not be stored in the current MSA without revising storage methods. As a result, munitions are being stored out of their designated containers to comply with explosive safety standards. However, storing assets out of their designated container degrades the electrical components of the munitions and reduces the reliability of the asset.

The current MSA is operating under numerous safety waivers obtained from the Department of Defense (DoD) Explosive Safety Board (ESB). In addition, most of the munitions handling and support equipment must be stored outside due to lack of storage space. Location of the MSA on the west side of the airfield requires transportation of munitions to the east airfield apron for servicing aircraft.

1.2 PURPOSE AND NEED

The purpose of the proposed action is to construct a new joint MSA that meets storage and QD requirements specified in Air Force Manual 91-201, Explosive Safety Standards (USAF 2001); Air Force Handbook 32-1084, Standard Facility Requirements; and other DoD ESB guidelines.

The proposed action would provide for increased protection of munitions and increased longevity of components. The need for a new MSA is to provide proper storage space for an assortment of munitions needed to maintain mission requirements. Under the proposed action the existing MSA would be relocated from a high land use area to a relatively unused portion of the base, the capacity for munitions storage would be increased, and safety and security concerns would be met.

The proposed action would provide safe and more efficient explosives handling and storage capabilities. Replacing the current MSA would remove all current safety waivers and provide adequate storage space for current mission requirements. The proposed action is the key element to the overall revitalization and development of the munitions storage at Andrews AFB.

1.3 LOCATION

Andrews AFB encompasses 4,346 acres and is located in Prince George's County, Maryland, five miles southeast of Washington, D.C. (Figure 1-2). The communities of Camp Spring and Morningside surround the base. The Washington Beltway is immediately northwest of the base. The surrounding land use is predominantly industrial and commercial.

1.4 SUMMARY OF ENVIRONMENTAL STUDY REQUIREMENTS

This EA analyzes potential effects of the proposed action and alternatives on the natural and human environment. These activities could potentially impact safety; air quality; noise; land use; geology and soils; water, biological, and cultural resources; traffic and circulation; visual resources; socioeconomics; environmental justice; and hazardous materials and wastes. Other study requirements could include protection of children from environmental health risks and safety risks; consultation and coordination with Indian tribal governments and DoD American Indian and Alaska native policy.

This EA is prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code [USC] §§ 4321-4347), Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] §§ 1500-1508), and 32 CFR 989, et seq., Environmental Impact Analysis Process (EIAP), which contains the U.S. Air Force (USAF) implementing regulations for NEPA. The intent of NEPA is to protect, restore, and enhance the human environment through well-informed federal decisions. A variety of laws, regulations, and Executive Orders (EO) apply to actions undertaken by federal agencies and form the basis of the analyses which will be presented in this EA. These federal regulations include, but are not limited to:

- EO 12372, Intergovernmental Review of Federal Programs;
- Clean Air Act (CAA);
- Endangered Species Act (ESA);
- Clean Water Act (CWA);
- Resource Conservation and Recovery Act (RCRA);

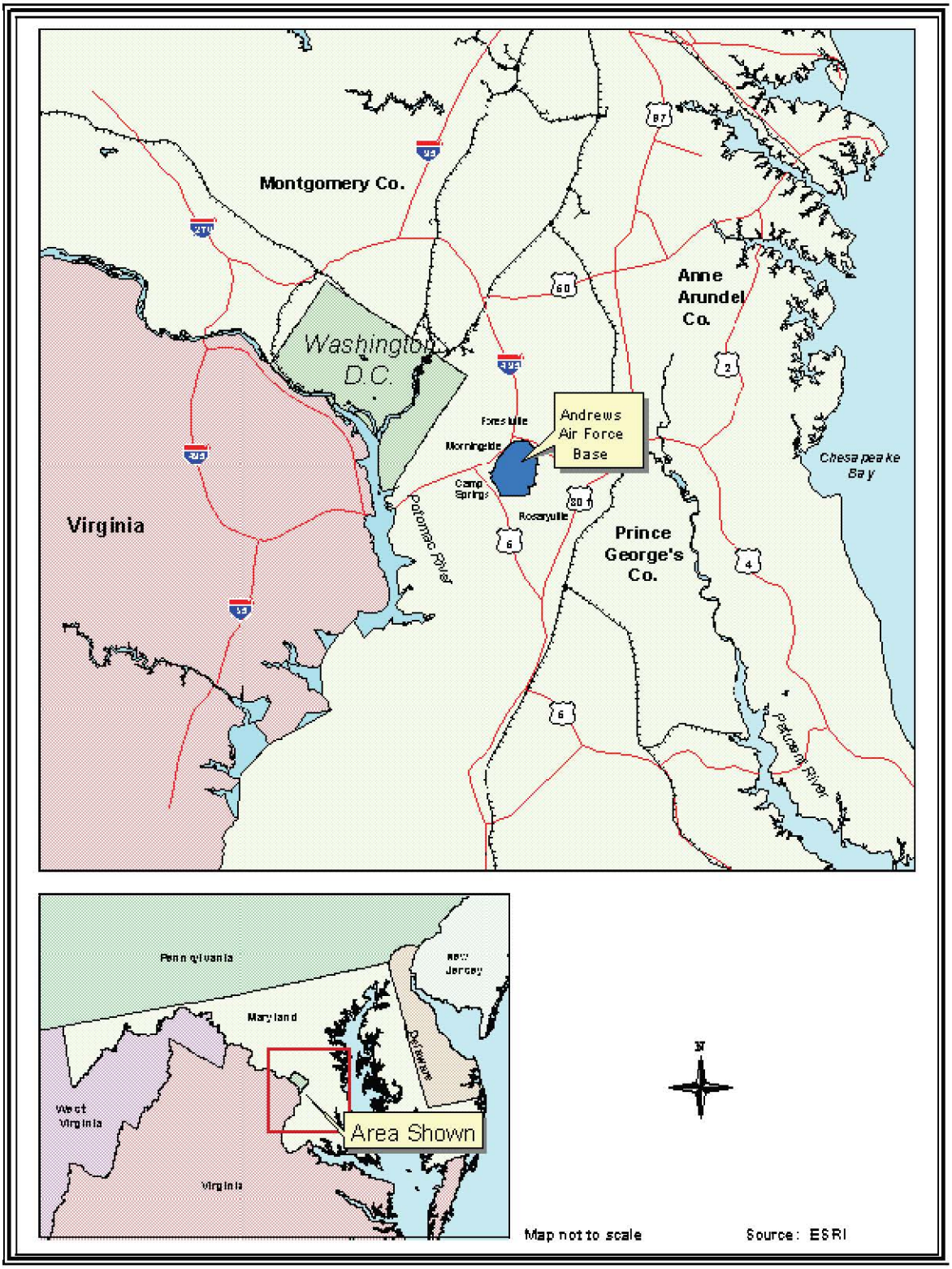

Figure 1-2. Andrews AFB and Vicinity.

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA);
- National Historic Preservation Act (NHPA); and
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.

1.4.1 National Environmental Policy Act

Prior to making any detailed statement of potential environmental impacts, NEPA and CEQ regulations require coordination with relevant federal, state, and local agencies to evaluate the potential environmental impacts associated with implementation of the proposed action. Comments from these agencies will be addressed and subsequently incorporated into the EIAP. The decision to be made, after a review of the analysis presented in this EA, would be whether to issue a finding of no significant impact (FONSI) or to proceed with development of an environmental impact statement to further quantify and detail the potentially significant impacts resulting from implementation of the proposed action or alternatives. While this EA provides information with which to make better decisions regarding the proposed action or alternatives, it does not imply project approval or authorization.

1.4.2 Interagency and Intergovernmental Coordination for Environmental Planning

Interagency and Intergovernmental Coordination for Environmental Planning would be conducted in accordance with EO 12372, Intergovernmental Review of Federal Programs; Title IV of the Intergovernmental Coordination Act (ICA) of 1968. ICA requires the proponent to notify concerned federal, state, and local agencies for evaluating potential environmental impacts of a proposed action. Comments from these agencies would be incorporated into EIAP.

1.4.3 Air Conformity Requirements

The CAA (42 USC §§ 7401-7671q), as amended, authorizes the U. S. Environmental Protection Agency (USEPA) to establish primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR § 50) that set safe concentration levels for public health and welfare.

NAAQS were developed for six criteria pollutants: particulate matter measuring less than 10 microns in diameter (PM_{10}), sulfur dioxide (SO_2), carbon monoxide (CO), nitrous oxides (NOx), ozone (O_3), and lead (Pb). The CAA also requires that each state prepare a State Implementation Plan (SIP) for maintaining and improving air quality and eliminating violations of the NAAQS. Section 176(c) of the CAA Amendments of 1990, 42 USC § 7506(c), establishes air conformity requirements for federal agencies to determine whether their undertakings are in conformance with the applicable SIP and demonstrate that their actions will not cause or contribute to a new violation of the NAAQS; increase the frequency or severity of any existing violation; or delay timely attainment of any standard, emission reduction, or milestone contained in the SIP.

1.4.4 Endangered Species Act

The ESA of 1973 (16 USC §§ 1531–1544, as amended) provides broad protection for species of fish, wildlife and plants that are listed as threatened or endangered in the U.S. The Act also is the enabling legislation for the Convention on International Trade in Endangered Species of Wild Fauna and Flora. Provisions are made for listing species, as well as for recovery plans and the designation of critical habitat for listed species. The Act outlines procedures for federal agencies to follow when taking actions that may jeopardize listed species, and contains exceptions and exemptions. Section 7 of the Act specifies that federal agencies, in consultation with the Secretary of the Interior or the Secretary of Commerce, must insure that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of an endangered or threatened species, or result in destruction or adverse modification of a critical habitat of a species.

1.4.5 Clean Water Act

The CWA of 1977 (33 USC § 1251 et seq.) regulates pollutant discharges that could affect aquatic life forms or human health and safety. Section 404 of CWA regulates development activities in or near streams or wetlands and requires a permit from the U. S. Army Corps of Engineers for dredging and filling in wetlands. The Maryland Stormwater Management Regulations (Annotated Code of Maryland, Environment Article, Title 4, Subtitle 2) and Stormwater Management Regulations (Code of Maryland Regulation [COMAR], 26.17.02.01-12) provide information necessary for submittal of storm water management plans by state and federal agencies to the Maryland Department of Environment (MDE), Water Management Administration for review and approval. EO 11990, Protection of Wetlands directs federal agencies to avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. 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 to restore and preserve the natural and beneficial values served by floodplains.

1.4.6 Resource Conservation and Recovery Act

The RCRA is an amendment to the Solid Waste Disposal Act of 1965 and was enacted in 1976 to address how to safely manage and dispose of the huge volumes of municipal and industrial waste generated nationwide. The goals set by RCRA were to protect human health and the environment from the hazards posed by waste disposal; to conserve energy and natural resources through waste recycling and recovery; to reduce or eliminate, as expeditiously as possible, the amount of waste generated, including hazardous waste; and to ensure that wastes are managed in a manner that is protective of human health and the environment. The solid waste program, under RCRA Subtitle D, encourages states to develop comprehensive plans to manage non-hazardous industrial solid waste and municipal solid waste, sets criteria for municipal solid waste landfills and other solid waste disposal facilities, and prohibits the open dumping of solid waste. The hazardous

waste program, under RCRA Subtitle C, establishes a system for controlling hazardous waste from the time it is generated until its ultimate disposal. The underground storage tank program, under RCRA Subtitle I, regulates underground tanks storing hazardous substances and petroleum products.

1.4.7 Comprehensive Environmental Response, Compensation, and Liability Act

The CERCLA is commonly known as Superfund and was enacted by Congress on December 11, 1980. This Act established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. The law authorizes short-term removals to address releases or threatened releases requiring prompt response and long-term remedial response actions to permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening. Long-term actions can be conducted only at sites identified on the National Priorities List. The CERCLA was amended by the Superfund Amendments and Reauthorization Act on October 17, 1986.

1.4.8 National Historic Preservation Act

The NHPA of 1966 (16 USC § 470) outlines procedures for management of cultural resources on federal property; the National Register of Historic Places (NRHP) and the Advisory Council on Historic Preservation (ACHP) were established under the Act. Cultural resources consist of prehistoric and historic districts, sites, structures, artifacts, or any other physical evidence of human activities considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. Cultural resources can be divided into three major categories: archeological resources (prehistoric and historic), architectural resources, and traditional cultural resources. Archeological resources are locations and objects from past human activities. Architectural resources are those standing structures that are usually over 50 years of age and are of significant historic or aesthetic importance to be considered for inclusion in NRHP. Traditional cultural resources hold importance or significance to Native Americans or other ethnic groups in the persistence of traditional culture. The regulations and procedures in 36 CFR 800 implement Section 106 of NHPA and require federal agencies to consider the effects on properties listed in, or eligible for inclusion in the NRHP. Federal agencies are required to consult with the State Historic Preservation Officers (SHPO) if their proposed action might affect such resources. In the State of Maryland, the SHPO is the Maryland Historical Trust (MHT). Prior to approval of the proposed action, Section 106 requires that ACHP be afforded the opportunity to comment.

1.4.9 Environmental Justice

EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires each federal agency to “make achieving environmental justice part

of its mission by identifying and addressing, as appropriate, disproportionately high human health or environmental effects of its programs, policies, and activities on minority populations and low income populations."

2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This section describes the alternatives the USAF has analyzed to accomplish the proposed action, as well as the no action alternative. The no action alternative is carried forward for analysis in accordance with NEPA (40 CFR 1502.14 [d]).

2.1 PROPOSED ACTION

The 113 CES and 316 CES are proposing to construct five different types of facilities on the new MSA site at Andrews AFB and demolish the existing MSA facilities. The proposed new facilities are Munitions Administration, Maintenance and Inspection, Inert Storage and Trailer Maintenance, Above Ground Multi-Cubicle Magazine Storage, and Munitions Storage Igloos (Table 2-1).

Table 2-1. Proposed Construction of Facilities on the New MSA at Andrews AFB.

Proposed Facility	Function
Munitions Administration	House munitions operations, combat ammunition system, munitions control, and flight/squadron leadership. Includes dispatch, training classroom, break area, and associated functions.
Maintenance and Inspection	Maintenance operations including assembly, disassembly, corrosion control, testing and troubleshooting, repair, and time compliance technical orders of various munitions components and containers
Inert Storage and Trailer Maintenance	Storage for inert munitions and trailer maintenance activities including assembly, disassembly, corrosion control and repair, and time compliance technical orders on various munitions ground support equipment
Above Ground Multi-Cubicle Magazine Storage	Storage for small quantities of explosives in separate bays for segregating incompatible hazard classifications and explosives groups, and for supporting munitions custody account customers, store combat alert loaded munitions trailers
Munitions Storage Igloos	Earth covered magazine structures (compartments) designed to protect stored ammunition and explosives and prevent propagation of an explosion that may occur in an adjacent magazine

The 113 CES is proposing to construct approximately 33,700 square feet (ft^2) of MSA facilities to support the ASA mission and F-16 aircraft training mission at Andrews AFB. The proposed functions would include two earth covered missile maintenance bays, munitions inspection bay,

bomb dummy unit processing and inspection bay, trailer maintenance bay, munitions support equipment storage, tool room, locker room, classroom/breakroom, administrative areas, and secure munitions storage consisting of multiple igloos and magazines. The munitions maintenance and storage complex includes an administrative area, maintenance shops, equipment storage, segregated storage magazine, and storage igloos. The supporting facilities include site preparation, pavements, utilities, communication/security support, access road, security fencing, and security lighting.

The 316 CES is evaluating the Wing request for approximately 24,970 ft^2 of MSA facilities to support base security forces personnel, Office of Special Investigations, State Department personnel, Air Force Explosive Ordnance Disposal Flight, and other supported base organizations. The primary facilities include three Hayman-type earth covered reinforced concrete igloos, seven reinforced concrete segregated storage magazines divided into 70 multi-cube compartments, munitions maintenance facilities, administrative area, and paved access road. The supporting facilities include utilities, pavements, site improvements, demolition, communications/security support, tree replacement, and storm water management.

2.1.1 Construct New MSA

Figure 2-1 illustrates the proposed components of the new MSA. The project siting area is approximately 38 acres and is bounded on the west by the East Runway approach-departure imaginary surface boundary, south and east by the installation boundary fence (extended line along the east boundary), and north by the East Perimeter Road. The proposed action footprint of buildings and road/parking surfaces covers approximately 7.1 acres.

The general building requirements for the new MSA would be designed in accordance with Air National Guard Engineering Technical Letter 01-1-1 and the International Building Code. In addition, the proposed facilities would be designed to match the materials and design elements specified in the Andrews AFB - Base Architectural Compatibility Plan (BACP). The new MSA would include single story buildings, similar to the existing MSA. In addition, the proposed action would need to comply with Antiterrorism/Force Protection requirements (Unified Facilities Code [UFC] 4-010-01 DoD Minimum Antiterrorism Standards for Buildings and USAF Installation Force Protection Guide). The following DoD ESB guides would be followed in designing the new MSA facilities:

- AFM 91-201, Explosives Safety Standards, 18 October 2001;
- AFI 21-201, Management & Maintenance of Non-Nuclear Munitions, 10 February 2005;
- AFI 31-101, Air Force Installation Security Program, 1 March 2003;
- AFI 32-1065, Grounding Systems, 1 October 1998;
- DoD 5100.76-M, Physical Security of Sensitive Conventional Arms, Ammunition, and Explosives, September 1992;

Figure 2-1. Proposed Siting of the New MSA.

- DoD 5200.1-R, Information Security Program, January 1997; and
- DoD 6055.9-STD, DoD Ammunition & Explosive Safety Standards, 5 October 2004.

The proposed site for the new MSA does not contain utilities and roads; therefore, the proposed activities would include development of an access road, utility systems, communications systems, intrusion detection system, security fencing, and security lighting. Exterior lighting and security fencing would be installed in accordance with the Andrews AFB BACP. Reinforced asphalt pavements with adequate loading/turn-around area capable of supporting 40-foot tractor trailer trucks, munitions maintenance, administration facility, and other necessary support would be constructed as part of the new MSA. Access roads would cross East Perimeter Road to connect the new MSA to the airfield ramp as depicted in Figure 2-1. Approximately 14,400 ft^2 of existing gravel road between East Perimeter Road and the airfield ramp would be paved to provide access from the new MSA to the airfield ramp. Approximately 81,600 ft^2 of new access road and 12,500 ft^2 of parking areas would be constructed south of East Perimeter Road. The route from the new MSA to the airfield ramp would follow approximately 400 ft of East Perimeter Road to take advantage of placing the access road to the new MSA site along an existing woods road. Locating the new access road along the existing woods road would permit crossing the wetland drainage depicted in Figure 2-1 at the narrowest point, approximately five feet wide. The wetland crossing would be bridged to avoid potential wetland impacts. Therefore, the proposed action would not affect wetlands on Andrews AFB.

Electric, drinking water, sewer, storm water, natural gas, security, and communication utilities would be installed along the access road in a 6-foot right-of-way to the new MSA facilities. Approximately 2,500 ft of new utility line (15,000 ft^2 in the utility corridor) would be connected to existing utilities that run along East Perimeter Road at the entrance to the new MSA. The new utilities would be buried approximately 5 ft below ground and would be tunneled under the narrow wetland drainage to avoid potential wetland impacts.

Proposed Location

Figure 2-2 illustrates the relocation of the current MSA from a congested area to a relatively unused area of the base. The new MSA could be sited near the base boundary because the blast from an accidental explosion is focused away from the base boundary based on the building design and the facilities setback accounts for the required QD arcs. An aerial view of the proposed location for the new MSA shows this area to be unoccupied (Figure 2-3).

Demolish Current MSA

The 316 CES is proposing to demolish the eight buildings (approximately 28,344 ft2) in the current MSA after construction of the new MSA. Following demolition and removal of debris, the site would be restored to vegetative cover compatible with airfield operations and adjacent land uses. Demolition activities would be conducted in accordance with Air Force Occupational Safety and Health (AFOSH) requirements.

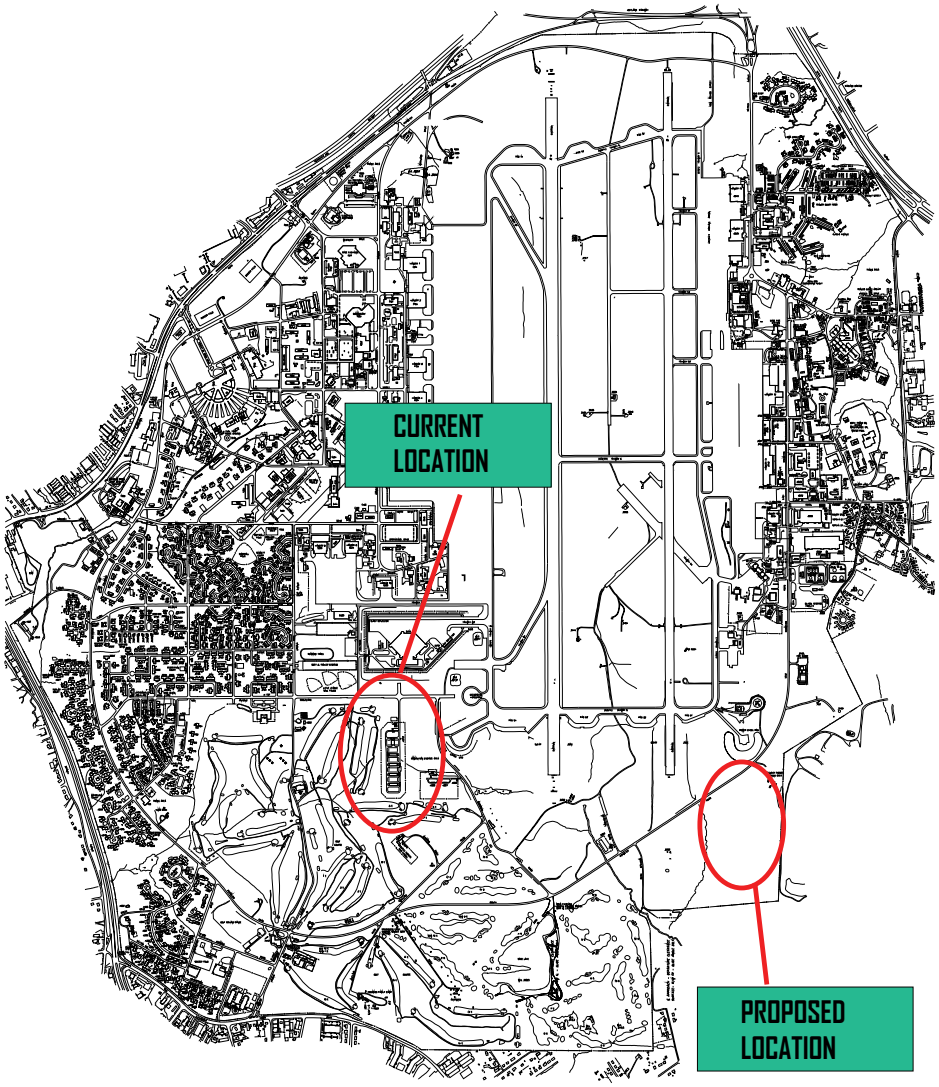

Figure 2-2. Current and Proposed Locations for the MSA at Andrews AFB.

2.1.2 Safety and Environmental Protection

Uniform minimum ammunition and explosive safety standards for personnel and property that have the potential of being exposed to the effects of an accidental explosion are established in DoD ESB. The site plan (see Figure 2-1) for construction of the new MSA is based on the QD requirements surrounding each building and the separation distances between buildings. No deviation in the site plan would be allowed without written approval from the Andrews AFB contracting officer and confirmation from DoD ESB that the new QD and building separation requirements meet DoD ESB minimum standards. The proposed action would be sited in accordance with the Federal Aviation Regulations (FAR) Part 77 (14 CFR 77, Objects Affecting

Navigable Airspace) governing airfield safety specifications. The construction and demolition activities would be conducted in accordance with the Andrews AFB Environmental Protection Standards for Contracts (Andrews AFB 2006a).

Figure 2-3. Aerial View of the Proposed MSA Site.

Prior to initiation of construction and demolition activities, plans and documents to provide environmental protection would be prepared by the contractor performing the work. At a minimum, the contractor would prepare a MDE Erosion and Sediment Control Plan and MDE Storm Water Management Plan. These plans and documents would be submitted to the Andrews AFB contracting officer for review and approval. Appropriate air quality permits would be obtained if necessary after determining the requirements for stationary emission sources. The proposed action is exempt from the Maryland Department of Natural Resources Forest Conservation Act because the action is proposed to be sited in areas under Federal Aviation Administration (FAA) restrictions for tree height obstructions. Best management practices (BMPs) for construction and demolition activities, according to Maryland State Standards, would be implemented for the proposed action. The proposed action would be conducted to the greatest extent practicable in accordance with DoD's 1991 policy supporting the national goal of "no net

loss" of wetlands. This would be accomplished by the design of the new MSA that avoids potential wetland impacts.

2.2 ALTERNATIVES

The 113 CES and 316 CES considered reasonable alternatives to the proposed action to formulate alternatives for analysis. The USAF considered all known alternative options during the development of the proposed action. Three alternatives to the proposed action were considered.

2.2.1 Construct New MSA and Reuse Current MSA for Compatible Uses - Alternative 1

Under this alternative, the new MSA would be relocated and constructed as specified for the proposed action. There would be eight buildings in the current MSA available for reuse after construction and relocation to the new MSA. However, these buildings were constructed in the 1950s and would require extensive renovation to update the facilities for personnel offices and energy efficiency. The mini storage warehouse configuration of the magazine storage areas (concrete walls, ceiling, and floors with a sliding garage-type door opening) would not be desirable for conversion to personnel uses. Appropriate uses of the current buildings without extensive renovation would be general storage and warehousing of miscellaneous equipment. This type of reuse would not require personnel located onsite and daily activities at the site. Authorization of acceptable contaminant risks from the Environmental Restoration Program (ERP) Office at Andrews AFB, as a standard practice to maintain environmental standards on base, would be required prior to reuse of the current MSA buildings.

2.2.2 Retrofit Current MSA - Alternative 2

The administrative/personnel functions in the current MSA are conducted from a temporary trailer sited to provide administrative personnel the required level of protection from an accidental explosion of munitions. The functional arrangement of Building 4972, which is designated for administrative/personnel functions is not reinforced to provide munitions personnel performing administrative duties with the required intraline separation from explosive operations. In addition, Building 4972 is approximately 5,500 ft^2 short of its space authorization (DCANG 2000) for administrative/personnel functions in the MSA. The munitions storage functions in the current MSA are limited because of QD violations and explosives criteria. Neither the facilities nor the QD can be increased because of explosive storage separation requirements, nearby recreational facilities, and inhabited buildings. Retrofitting the current MSA would require an extreme reduction in the munitions storage capacity at Andrews AFB to satisfy safety requirements. Scattered MSA facilities on base and/or munitions storage elsewhere would be required to provide the design capacity and support the mission at Andrews AFB.

2.2.3 Relocate MSA to an Area Installation - Alternative 3

Current and new mission requirements have exceeded the design limits of the current MSA; therefore, one alternative would be to relocate the MSA at Andrews AFB to another installation

in the local area with excess capacity for munitions storage. Regular requests from area installations to temporarily store munitions at Andrews AFB indicates that excess capacity for munitions storage is not available. The ASA mission (antiterrorism/force protection) at Andrews AFB requires rapid response from munitions personnel with on base munitions to support the mission.

2.2.4 No Action Alternative

Under the no-action alternative, the MSA would not be relocated and there would continue to be a shortfall of munitions storage capacity for support of the alert and training missions at Andrews AFB. Existing munitions would continue be sited closer to existing and planned facilities than allowed by DoD ESB, resulting in QD violations. Surrounding facilities and base personnel would continue to be endangered by the current MSA, requiring numerous waivers from DoD ESB.

CEQ regulations stipulate that the no-action alternative be analyzed to assess any environmental consequences that may occur if the proposed action is not implemented. Therefore, this alternative will be carried forward with the proposed action and alternative 1 for analysis in the EA.

2.2.5 Alternative Selection Criteria

Safety and efficient explosives handling were primary considerations for analysis and evaluation of alternatives. The alternatives selection criteria against the proposed action and alternatives carried forward for analysis are presented in Table 2-2.

2.2.6 Alternatives Considered but Eliminated from Further Consideration

Alternatives 2 and 3 were considered but eliminated from further consideration. The alternative to retrofit the current MSA was rejected because of the site limitations and this alternative would require operation of additional MSA facilities. The alternative to relocate the MSA off base was rejected because Andrews AFB may require immediate access to munitions in fulfillment of its mission. These alternatives failed to meet the alternatives selection criteria presented in Section 2.2.5.

Table 2-2. Alternatives Selection Criteria for Relocation of MSA at Andrews AFB.

Criteria	Proposed Action	Alternative 1	No Action Alternative
1. New MSA must meet Air Force manual 91-201, Air Force handbook 32-1084, Antiterrorism/Force protection Standards, and DOD ESB Guidelines.	Yes	Yes	No
2. New MSA must be properly sited to remove existing safety waivers.	Yes	Yes	No
3. New MSA must provide administrative personnel the required level of protection specified in Item 1.	Yes	Yes	No
4. New MSA must be accessible to support the alert mission and training missions.	Yes	Yes	No
5. New MSA must be enclosed with security fencing and perimeter lighting.	Yes	Yes	No
6. New MSA must be adequately sized and properly configured to support a large munitions requirement as well as maintenance and storage of associated munitions support handling equipment.	Yes	Yes	No

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3.0 AFFECTED ENVIRONMENT

This section describes the relevant environmental conditions at Andrews AFB for resources potentially affected by implementation of the proposed action, reuse alternative, and no action alternative described in Section 2.0. Although the Region of Influence (ROI) or the expected geographic scope of potential impacts includes all of Andrews AFB, the actual footprint of the new MSA is approximately 7.1 acres. In compliance with guidelines contained in NEPA, CEQ regulations, and AFI 32-7061, the description of the affected environment focuses on those resources potentially subject to impacts.

3.1 SAFETY

3.1.1 Definition of Resource

Safety issues addressed in this EA include risks associated with construction of a new MSA, demolition of the current MSA, airfield operations, anti-terrorism measures, and management and use of munitions for installation operations and training activities. The ROI for safety is Andrews AFB and the lands immediately adjacent to the installation.

3.1.2 Existing Conditions

Construction and demolition site safety and prevention of mishaps are ongoing activities at Andrews AFB. As a part of the contracts let for construction services, standard terms and conditions include safety at the forefront. Areas of concern include compliance with confined space regulations; minimum personal protection equipment standards to include footwear, hardhats, and eye protection; heavy equipment operations; and limited access to the area. Construction and demolition activities are conducted in accordance with AFOSH requirements specified in Air Force Policy Directive 91-3 (USAF 1993).

The FAR Part 77 (14 CFR 77, Objects Affecting Navigable Airspace) govern airfield safety specifications. The DoD publishes design standards for airfields, including standards governing airfield specifications for protection of the airspace from obstacles to air navigation (UFC 3-260-01, Airfield and Heliport Planning and Design). Details are provided for man-made and natural objects that may be located in the airfield operations area. Except for necessary airfield appurtenances, buildings and personnel facilities shall not be located in clear zones. Objects shall not penetrate imaginary surfaces as designated in FAR part 77.

The UFC 4-010-01 specifies DoD Antiterrorism Standards which requires DoD to adopt and adhere to common criteria and minimum construction standards to mitigate antiterrorism vulnerabilities and terrorist threats. These requirements are incorporated in the Andrews AFB General Plan and apply to new construction projects.

Munitions handling and storage at Andrew AFB area conducted in accordance with Air Force Manual 91-201, Explosive Safety Standards. Munitions activities are conducted in accordance with DoD ESB guidelines. However, the current MSA is operating under numerous safety

waivers obtained from the ESB because of space limitations and QD violations associated with the close proximity to the base golf course and inhabited buildings.

3.2 AIR QUALITY

3.2.1 Definition of Resource

The CAA requires the maintenance of NAAQS. NAAQS, developed by the USEPA to protect public health, establish limits for six criteria pollutants: O_3, NO_X, CO, SO_2, Pb, and inhalable particulates (course particulate matter greater than 2.5 micrometers and less than 10 micrometers in diameter [PM_{10}] and fine particles less than 2.5 micrometers in diameter [$PM_{2.5}$]).

The CAA requires states to achieve and maintain the NAAQS within their borders. Each state is required by EPA to develop a State Implementation Plan (SIP) that contains strategies to achieve and maintain the national standard of air quality within the state. Areas that violate air quality standards are designated as nonattainment areas for the relevant pollutants. Areas that comply with air quality standards are designated as attainment areas for relevant pollutants.

3.2.2 Existing Conditions

3.2.2.1 *Climate*

The climate at Andrews AFB supports warm and humid summers, with frequent thunderstorms, and cool winters with surges of cold, dry air from the north that produce moderate to heavy snowfall. Monthly mean temperatures range from 34 degrees Fahrenheit (°F) in January to 77°F in July. Mean annual precipitation is about 42 inches and average winter snowfall is 22 inches per year.

3.2.2.2 *Local Air Quality*

The Washington D.C. metropolitan area is designated as moderate nonattainment for ozone (under the 8-hour averaging standards) and nonattainment for $PM_{2.5}$ (EPA 2006). The area is in attainment of all other criteria pollutants. Federal agencies proposing an action in a nonattainment area must perform a conformity analysis to determine if proposed emissions will exceed de minimis levels established by EPA for those pollutants in nonattainment.

3.2.2.3 *Emissions at Installation*

Emissions at Andrews AFB are from stationary sources and include boilers/heaters, gasoline storage and dispensing operations, paint spray booths, emergency generators, abrasive blasting, and off-aircraft jet engine testing. Air permits are required for fuel oil or gasoline boilers with a heat input greater than one million BTU and emergency generators greater than 500 horsepower. Andrews AFB operates under a state issued operating permit as a major source of NO_x emissions; however, the base is classified as synthetic minor due to less than 25 tons of NO_x emissions annually (USAF 2007).

3.3 NOISE

3.3.1 Definition of Resource

Noise is defined as sound that interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Variations in human responses to noise are related to the type and characteristics of the noise source, distance between the source and the receptor, sensitivity of the receptor, and time of day.

3.3.2 Existing Conditions

The range of ambient noise in the United States varies up to 50 A-weighted decibels (dBA) based on a number of different factors. Some of these factors can include distance from major thoroughfares and airports, population density, age of a neighborhood, and time of day. Noise levels in excess of 65 decibels day-night average sound level (DNL) are normally unacceptable for noise-sensitive land uses such as residences, schools, and hospitals. Figure 3-1 displays the 2006 noise contour lines for Andrews AFB.

3.3.2.1 *Aircraft Activity*

Aircraft assigned to Andrews AFB are the one significant source of noise. Andrews AFB experiences high levels (day-night noise levels of 65-85 dBA) of aircraft noise (Andrews AFB 2003a). Andrews AFB does not operate any special-use airspace or supersonic areas. The Andrews AFB Air Installation Compatible Use Zone (AICUZ) program is used to protect aircraft operational capabilities and to assist local government officials in protecting and promoting the public's health, safety, and quality of life.

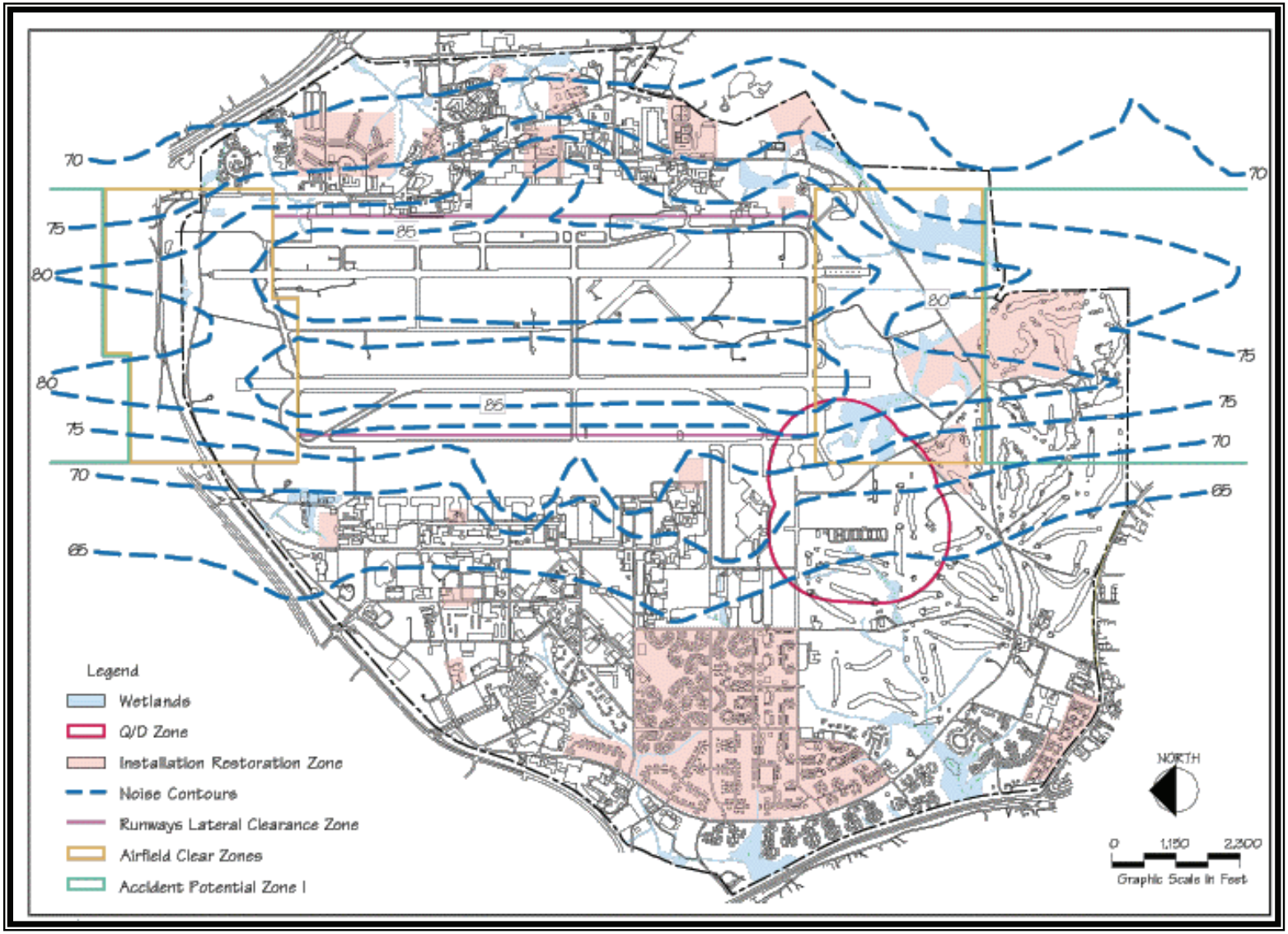
3.3.2.2 *Ground Based Activity*

Off base traffic produces the highest noise levels surrounding Andrews AFB. The daily maintenance, transportation, and industrial functions associated with operation of Andrews AFB produces ground-based noise sources. However, the noise levels produced from operation of ground-support equipment and vehicular traffic are generally insignificant to the noise from aircraft activity (Andrews AFB 2003a).

3.4 LAND USE

3.4.1 Definition of Resource

Land use generally refers to human occupation and modification of land, often for residential or economic purposes. It may also refer to acquisition and public ownership of land for preservation or protection of natural resources such as wildlife habitat, vegetation, or unique features. Present and proposed land use analysis is an integral part of municipal planning efforts. General land use



Source: Andrew+s AFB

Figure 3-1. Noise Contours at Andrews AFB, 1998 Data.

categories include agricultural, residential, commercial, industrial, and public use that may include institutional, recreational, and open-space classifications. Land use planning is primarily concerned with guiding and shaping new development and redevelopment while protecting significant environmental, historic, or cultural features.

The Andrews AFB General Plan provides direction for locating construction and improvements to guide future development (Andrews AFB 2003a). The appearance, quality of life and functional efficiency of the installation is improved by collocating similar functions and separating incompatible land uses. Also land use conflicts are avoided in the General Plan by considering the land use planning and goals of the surrounding community.

3.4.2 Existing Conditions

3.4.2.1 *Regional Land Use*

Andrews AFB, lying approximately 5 miles southeast of Washington, D.C. is part of an inner suburb of our nation's capital. Nearby communities are Camp Springs, Morningside, Woodyard, and Clinton. Regional land uses are mostly residential, commercial, or industrial associated with operation of Washington, D.C. (Andrews AFB 2003a).

3.4.2.2 *Local Land Use*

Just north of Andrews AFB is the Suitland Parkway, a limited access scenic roadway that is listed on the NRHP. There are several commercial and industrial developments north of Suitland Parkway. An area of limited light industrial development is on the east side of the base. Residential communities and

Piscataway Creek Stream Valley Park is located southeast of the base. Commercial and light industrial developments are south of the base. The Tanglewood Community Park, Tanglewood Special Education Center, Clinton Park Shopping Center, Clinton Plaza shopping center and residential developments are located north of the base. Land use west of the base is primarily residential with several commercial shopping centers and office clusters (Andrews AFB 2003a). The off base land adjacent to the proposed location for the new MSA is abandoned and was previously used for auto salvage.

3.4.2.3 *Installation Land Use*

The pattern of land use is the result of the base's development since the 1950s. Andrews AFB is divided into western and eastern sections, separated by the airfield that runs north and south. The airfield at Andrews AFB is used as the aerial port of arrival/departure for the President of the United States, members of Congress, and foreign heads of state. The western portion of the main base contains the majority of the land area, including a large outdoor recreation/golf course facility, all of the community facilities, and Malcolm Grow Medical Center. The majority of the industrial uses are located in the eastern portion of the base. Both sections house mission and administrative facilities, as well as accompanied and unaccompanied housing.

The General Plan (Andrews AFB 2003a) identifies 11 general land use classifications Table 3-1). The airfield occupies the greatest acreage as a single land use. When combined with the adjacent acreages for open space (primarily clear zones and approaches) and outdoor recreation (primarily golf courses) the total is area is 69 percent (3,002 acres) of the base. The proposed relocation of the MSA would occur in the open space land use category. The existing MSA is located in the industrial area.

Table 3-1. Land Use Categories on Andrews AFB.

Land Use	Acres
Administrative	127
Aircraft Ops and Maintenance	365
Airfield	1,518
Community	135
Housing (accompanied)	423
Housing (unaccompanied)	82
Industrial	143
Medical	47
Open Space	756
Outdoor Recreation	728
Water	22
Total	4,346

The Andrews AFB AICUZ program protects aircraft operational capabilities and assists local government officials in protecting and promoting the public's health, safety, and quality of life. The primary purpose is to prevent development of incompatible land uses surrounding the base and its effect on the Air Force's mission capability (Andrews AFB 2003a).

3.5 GEOLOGICAL RESOURCES

3.5.1 Definition of Resource

Geological resources are defined as the geology, soils, and topography of a given area. The geology of an area includes bedrock materials, mineral deposits, faults, aquifer recharge zones, and fossil remains. The principal geologic factors influencing stability of structures are soil stability and seismic properties. Soil, in general, refers to unconsolidated earthen materials overlying bedrock or other parent material. The topography refers to elevation and relief

(changes in elevation) of an area. The ROI for geologic resources is Andrews AFB and the lands immediately adjacent to the installation.

3.5.2 Existing Conditions

3.5.2.1 *Regional Setting*

The regional geologic resources exist in the Inner Coastal Plain of Maryland and the Fall Line. The Fall Line marks the interface between the Coastal Plain and Piedmont physiographic provinces. Topography in the area consists of broad Coastal Plain uplands with elevations around 260 feet above mean sea level (MSL). Relief is most evident along the heads of first order streams. Topography is considerably more pronounced. Upland terraces are dissected by low and intermediate order stream courses forming series of knolls and ridges interspersed with narrow valleys. There are no geologic hazards known for the region.

3.5.2.2 *Installation*

Much of the surficial geology at the main base is comprised of the late Tertiary Period Pliocene Epoch (about 7 million years old) upland deposits. These deposits consist of irregularly bedded cobbles, gravel, and fine sand intermixed with silt or clay, and vary in thickness from 10 feet to 20 feet. The underlying Calvert Formation is visible where streams have cut deeply through the upland deposits. This formation was deposited during the Miocene Epoch, approximately 19 million years ago, and consists of a mixture of sands, silts, clays, and shell beds. Grading for construction of runways, housing, and other facilities has disturbed the surface formations. There are no geologic hazards known for Andrews AFB.

Andrews AFB lies on silty to sandy and gravelly deposits of the upper Coastal Plain (Kirby 1967). Much of the original land area has been disturbed by cut-and-fill or other construction activities since the construction of the base in 1942. Some areas, especially in and around the runways and taxiways, have been highly disturbed. Some disturbed areas have 20 feet or more of miscellaneous fill material. About 45-50 percent of the main base now consists of land so altered by earth disturbances that the original soil series could not be determined. Approximately 10 percent of the main base remains undisturbed, mainly around the perimeter of the base and in parts of the golf course.

The new MSA would be constructed on the Sassafras-Croom soil association. These soils occur on gently sloping to steep, well-drained, dominantly gravelly soils with a compact subsoil or substratum. Primary land uses on this association include general farming and residential development (Kirby 1967). The topography at Andrews AFB ranges from less than 200 feet MSL to greater than 280 feet MSL. The elevation at the proposed site for construction of the new MSA ranges from approximately 240 feet to 270 feet MSL (Andrews AFB 2003a).

3.6 WATER RESOURCES

3.6.1 Definition of Resource

Water resources analyzed in this EA include surface water, ground water, wetlands, and floodplains. Surface water resources include lakes, ponds, rivers, and streams. Groundwater resources are located in underground aquifers. Wetlands are defined in Section 404 of the CWA as generally including swamps, marshes, bogs, and similar areas. Section 404 also establishes a program to regulate the discharge of dredged and fill material into waters of the U.S., including wetlands. EO 11990, Protection of Wetlands, requires federal agencies to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. Floodplains are defined by EO 11988, Floodplain Management, as flood-prone areas subject to a one percent or greater chance of being inundated by a 100-year flood flooding in any given year. The ROI for water resources is Andrews AFB.

3.6.2 Exiting Conditions

3.6.2.1 *Regional Conditions*

Surface Water

Surface waters are located in three significantly diverse watersheds (Potomac, Anacostia, and Patuxent rivers) that drain 2,317 square miles of the east-central portion of the Chesapeake Bay Basin. The Patuxent River watershed drains approximately 158,000 acres of the eastern portion of Prince George's County, and 132,000 acres drain to the Anacostia River (west of Andrews AFB). The majority of Andrews AFB is located in the Potomac River watershed. Several major tributaries to the Potomac River originate on or near the base. Meetinghouse Branch and Payne Branch originate in the southwestern quadrant and flow west to the river. Piscataway Creek originates in the southeast corner of Andrews AFB. Tinkers Creek is in the southwest corner of the base and flows into Piscataway Creek. Henson Creek is located northwest of Andrews AFB and flows into Broad Creek. The headwaters of Cabin Creek and Charles Branch are in located the northern portion of the base, draining eastward to the Patuxent River (Andrews AFB 201).

Ground Water

Several major or regionally significant aquifers occur at significant depths. In descending stratigraphic sequence, these include the Aquia, Magothy, Patapsco, and Patuxent formations. The Patapsco and Patuxent formations are regional aquifers that supply ground water to consumers in Prince George's, Anne Arundel, and Charles counties (Andrews AFB 2001). The regional aquifers have an average thickness of 1,600 feet and maximum depth of about 5,000 feet (U.S. Geological Survey 1997).

Wetlands

About 10 percent of the State of Maryland is classified as wetland. Several surveys of wetland acreage have been done in Maryland since the early 1900s. The most recent statewide estimate is from the U.S. Fish and Wildlife Service National Wetlands Inventory (NWI). According to the 1995 NWI survey, Maryland has approximately 600,000 acres of vegetated wetlands. Nearly 99 percent of the state's wetlands are estuarine and palustrine. The most abundant type is palustrine or freshwater wetlands, representing 57 percent of the state's total wetlands. Most palustrine wetlands (89%) are nontidal wetlands. Estuarine wetlands (salt and brackish wetlands) represent 42 percent of the state's total wetlands. Prince George's County has 32,511 acres of wetlands; most of the wetlands (24,040 acres) are palustrine (Maryland Department of Environment 2007).

Floodplains

Regional floodplains in the vicinity of Andrews AFB depicted on Federal Emergency Management Agency (FEMA) maps include Henson Creek, Cabin Branch, Back Branch, Charles Branch, Benson Creek, Meetinghouse Branch, and Piscataway Creek. However, there are no floodplains within Andrews AFB listed on the FEMA maps (Prince George's County 2007).

3.6.2.2 *Installation*

Surface Water

There are five small ponds (less than one acre each) and one larger (17 acres) surface water impoundment (Freedom Lake) on Andrews AFB. Storm water passes through oil/water separators in the industrial areas and through swales and ditches in other areas. Storm water discharges eventually flow into Henson Creek, Meetinghouse Branch, and Payne Branch to the west; Henson Creek, Cabin Creek, and Charles Branch to the east; and Piscataway Creek to the southeast. The Piscataway Creek flows southward off Andrews AFB. Permits for storm water discharge from Andrews AFB include Maryland General Discharge Permit No. 02-SW and General Discharge Permit No. 05-SF-5501 (National Pollution Discharge Elimination System Permit No. MDR 055501). Except for an intermittent drainage, there are no surface waters in the proposed site for construction of the new MSA and there are no surface waters at the current MSA (Andrews AFB 2001).

Ground Water

Andrews AFB is located in a section of the Inner Coastal Plain where several minor and regional aquifers exist. Several of these hydrogeologic units occur at or near the ground surface at the respective facilities. The upland deposits, typically underlain by the Calvert Formation, consist of stratified sand, silt, clay, and gravel. Ground water is generally encountered at depths of less than 20 feet below ground level and probably exists under water table (unconfined) conditions. Precipitation is the main source of groundwater recharge to the upland deposits. (Andrews AFB 2001).

Andrews AFB does not use ground water for its drinking water supply. Instead, the installation receives its water from Washington Suburban Water Sanitary Commission's main distribution network (Andrews AFB 2003a).

Wetlands

There are approximately 80 acres of jurisdictional wetlands on Andrews AFB (Andrews AFB 2004). These wetlands include palustrine forested wetlands (36 acres), palustrine scrub/shrub wetland (9 acres), palustrine emergent wetlands (31 acres), palustrine unconsolidated bottom excavated pond (4 acres), and palustrine unconsolidated bottom pond with beaver activity (1 acre).

Approximately 0.5 acres of palustrine wetlands are in the proposed site for construction of the new MSA (see Figure 2-1). The design drawing of the new MSA indicates that the access road and utilities would cross a narrow (approximately five feet wide) segment of the intermittent stream leading to Piscataway Creek. There are no wetlands at the current MSA.

Floodplains

There are no floodplains in the proposed site for construction of the new MSA or the current MSA site. Andrews AFB is situated on a high, nearly level upland terrace; consequently drainages consist of small, first-order streams (Andrews AFB 2003a). The GeoBase Map of flood zones at Andrews AFB indicates that the nearest flood zone is south of the proposed construction site on Piscataway Creek near the southern boundary of the installation. These flood zone boundaries were derived from elevation contours and correspond approximately to the 100-year floodplain.

3.7 BIOLOGICAL RESOURCES

3.7.1 Definition of Resource

Biological resources evaluated in this EA include vegetation and forests, wildlife, and threatened and endangered species. Vegetation and forests provide habitat that supports wildlife and threatened and endangered species on Andrews AFB. Undeveloped portions of the installation may be vegetated grasslands or landscape vegetation such as bedding plants, as well as dominated by trees in forested areas. Wildlife include game and non-game animal species, including migratory birds recognized by the Maryland Department of Natural Resources (DNR) and U.S. Fish and Wildlife Service (USFWS). Threatened and endangered species include plants and animals protected by Maryland DNR under COMAR and United States Fish and Wildlife Service under ESA and Migratory Bird Treaty Act. In accordance with the 2003 National Defense Authorization Act and EO 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds), DoD must assess the effects of military readiness activities on migratory birds. The ROI for biological resources is Andrews AFB.

3.7.2 Existing Conditions

3.7.2.1 *Vegetation and Forests*

Vegetation communities at Andrews AFB consist of extensively managed landscape areas (improved areas) and other unmanaged patches of natural plant communities. Nearly 80 percent of the main base is developed or intensely managed (improved or semi-improved). The intensely managed areas include lawns, gardens, golf course fairways, and recreational fields. Semi-improved areas include runway borders, the infield, and airfield approach clear zones. Dominant turf species are fescue (*Festuca elatior*) and perennial ryegrass (*Lolium perenne*). The remaining unimproved areas contain mixed hardwood forests, mixed hardwood/pine forests, pine forests, red maple (*Acer rubrum*) swamp, and shallow emergent marsh (Andrews AFB 2001).

Approximately 720 acres of forestland occur on Andrews AFB. These forested areas are scattered around the perimeter and southern portion of the main base. Typical tree species in forested areas include white oak (*Quercus alba*), black oak (*Q. velutina*), northern red oak (*Q. rubra*), red maple, Virginia pine (*Pinus virginiana*), sweetgum (*Liquidambar styraciflua*), American beech (*Fagus grandifolia*), and yellow poplar (*Liriodendron tulipifera*). Mountain laurel (*Kalmia latifolia*), highbush blueberry (*Vaccinium corymbosum*), and Christmas fern (*Polystichium acrostichoides*) are common in the understory (Andrews AFB 2001). Due to the lack of forestry markets in the local area and scattered stands of forests, there is no commercial forestry program at Andrews AFB.

The current MSA is in a field of mowed grass cover and is partly surrounded by mixed hardwood-pine forest. The proposed site for construction of the new MSA is an undeveloped portion of the installation and is occupied by mixed hardwood forest. There are approximately 120 acres of mixed hardwood forest contiguous to the site proposed for construction of the new MSA. The trees are uneven aged and indicate prior harvesting and regeneration during the past 20-30 years. There are no forests of high ecological value on Andrews AFB (Maryland Department of Natural Resources 2003).

3.7.2.2 *Wildlife*

The habitat types at Andrews AFB support a high diversity of wildlife, but primarily bird species. Surveys conducted in 1994 identified 84 bird species. Birds associated with open water included Canada Goose (*Branta Canadensis*) and Great Blue Heron (*Ardea herodias*). Birds associated with mixed hardwood forests included Eastern Wood Pewee (*Contopus virens*), and Red-eyed Vireo (*Vireo olivaceous*). Birds observed in stands of mixed hardwood forest included Prothonotary Warbler (*Protonotaria citrea*) and Black and White Warbler (*Mniotilta varia*). Birds associated with mowed turfgrass and mowed fields included House Finche (*Carpodacus mexicanus*), Bluebird (*Sialia sialis*), and American Crow (*Corvus brachyrhynchos*). American Kestrel (*Falco sparverius*) and Red-tailed Hawk (*Buteo jamaicensis*) were common raptors observed at Andrews AFB (Andrews AFB 2001).

Small mammals at Andrews AFB include white-footed mouse (*Peromyscus leucopus*) and southeastern shrew (*Sorex longirostris*). Larger mammals include eastern gray squirrel (*Sciurus carolinensis*), cottontail (*Sylvilagus floridanus*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis marsupialis*), and white-tailed deer (*Odocoileus virginianus*). Various species of bats may occur on Andrews AFB (Andrews AFB 2001).

Common reptiles in Maryland and likely to occur at Andrews AFB include eastern garter snake (Thamnophis sirtalis) and eastern box turtle (*Terrapene carolina*). Common fish in the Base Lake include largemouth bass (*Micropterus salmoides*) and bluegill (*Lepomis macrochirus*) (Andrews AFB 2001).

The proposed project area for construction of the new MSA would be expected to support various birds, mammals and reptiles common to mixed hardwood forests. The current MSA site would be expected to support primarily birds and small mammals associated with mowed fields.

3.7.2.3 *Threatened and Endangered Species*

Inventories of protected species of plants, birds, vertebrates, and invertebrates potentially occurring at Andrews AFB were performed in 1994 and 1998 (Andrews AFB 2001). Data were updated in a 2005 threatened and endangered species survey (Andrews AFB 2005). No recent recorded sightings of threatened or endangered animal species are known from the installation. One federally endangered plant occurs at Andrews AFB; the only known population of sandplain gerardia (*Agalinis acuta*) is located on the south-southeast section of Andrews AFB in old field habitat. Five state threatened or endangered plant species occur on Andrews AFB including blunt-leaved gerardia (*Agalinis obtusifolia*, endangered), swollen bladderwort (*Utricularia inflata*, endangered), Skinner's foxglove (*Agalinis skinneriana*, endangered), Buxbaum's sedge (*Carex buxbaumii*, endangered), and Button sedge (*Carex bullata*, threatened). No listed species, state or federal, have been identified within or near the proposed project area for construction of the new MSA or at the current MSA (Andrews AFB 2005a).

3.8 TRANSPORTATION AND CIRCULATION

3.8.1 Definition of Resource

Transportation and circulation as defined in this EA is focused on the vehicular roadway system that enables persons and goods to move about a given area. The primary concerns for this resource pertain to the capacity and efficiency of the roadway access and circulation system. The other modes of transportation, including pedestrian, rail or air are not evaluated in this EA because of the limited size and scale of the proposed action and the alternative.

The number of vehicles that can pass over a given section of roadway during a specified period generally measures roadway capacity. This capacity is usually considered in terms of levels of service (LOS) where different LOS represents different levels of congestion. The LOS is a qualitative measure describing operational conditions within a traffic stream; it is described in

terms of speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

3.8.2 Existing Conditions

3.8.2.1 *Regional and Local Circulation*

Andrews AFB is adjacent to Interstate 495 (Capitol Beltway), which carries traffic around Washington, D.C. Local arteries serving Andrews AFB are Branch Avenue (MD Route 5), Pennsylvania Avenue (MD Route 4) and the Suitland Parkway. These roads have interchanges with the Capitol Beltway, and also connect Andrews AFB to the District of Columbia. The Capitol Beltway carries large traffic volumes and traffic is congested during peak hours (Andrews AFB 2003a).

3.8.2.2 *Base Circulation*

The roadway system at Andrews AFB is designed to safely handle and distribute vehicular movements with a minimum amount of congestion and delay. Andrews AFB has an integrated system of primary, secondary and local roads. Perimeter Road makes an 8.4-mile loop around base and is the only primary roadway connecting the east and west sides of the base. Other primary, roads include Arnold Avenue, Menoher Avenue, Virginia Avenue, Alabama Avenue, Brookley Avenue, Arkansas Road, F Street, Westover Drive, Patrick Avenue, and Fetchet Avenue. Secondary roads include San Antonio Boulevard, Wisconsin Road, Atlanta Avenue, Tuskeegee Drive, California Avenue, Colorado Avenue, Pennsylvania Avenue, and Pearl Harbor Drive. There are two signalized intersections; the first traffic signal is at Patrick Avenue and North Perimeter Road, and the second is at Virginia Avenue and South Perimeter Road (Andrews AFB 2006b).

There are five entry control points at Andrews AFB. The Main and West Gates are accessible from Allentown Road. The North Gate provides access for commercial deliveries from Suitland Parkway. The Virginia Gate is accessible from Old Alexandria Ferry Road. The Pearl Harbor Gate is accessible from Dower House Road via Pennsylvania Avenue/MD Route 4 (Andrews AFB 2006b).

3.8.2.3 *On-Base Parking*

Off-street parking is generally adequate on Andrews AFB; however, the General Plan encourages consolidation of parking lots or even development of parking garages that serve multiple buildings in accordance with force protection criteria.

The overall pavement condition for roads and parking lots on base is adequate, and the majority of the paved surfaces are in good condition (Andrews AFB 2003a). However, condition of the pavement varies significantly. Poor pavement conditions are a result of age and traffic load, temperature variance, and freeze/thaw cycles (Andrews AFB 2006b).

3.9 VISUAL RESOURCES

3.9.1 Definition of Resource

Visual resources are defined as the natural (landscape, water bodies, vegetation) and man-made (buildings, structures, roadways) features that comprise the aesthetic qualities of an area. The type, arrangement, and contrast of physical features give observers a visual impression of the environment. Any activity that potentially alters the quality or perceived character of the environment could be considered as having an effect on visual resources. Visual perceptions may be altered, for example, by construction activities, forestry, and other land disturbances. Aesthetic perceptions of the environment may be altered, for example, by industrial activities, wastewater discharges, and burning. Generally, the impact on visual resources is related to the magnitude of actions affecting visual and aesthetic perceptions of the environment. The ROI for visual resources is Andrews AFB and the lands immediately adjacent to the installation.

3.9.2 Existing Condition

3.9.2.1 *Regional Visual Character*

Andrews AFB is adjacent to the Capitol Beltway, which functions as the primary circumferential freeway around Washington, D.C. The regional visual character is an urban-suburban setting dominated by a mix of medium-density housing, commercial properties, and highways. The base is bounded on all sides by the communities of Morningside, Woodard, Clinton and Camp Springs, Maryland (Andrews AFB 2003a).

3.9.2.2 *Installation*

Most of the 4,346 acres at Andrews AFB are developed for support of mission activities. Facilities include two parallel runways and associated taxiways and parking aprons; wing and unit headquarters; industrial facilities; community center; unaccompanied and family housing; medical center; recreational facilities; and open space. Andrews AFB has approximately 101 miles of paved roads; two active runways that are 9,301 and 9,756 feet long, respectively; two mass aircraft parking aprons (west and east) and a network of parallel and connecting taxiways. There are approximately 10.2 million square feet in approximately 1,379 buildings on the base (Andrews AFB 2003a).

The existing MSA is located in a developed area of the base, but is visually screened by surrounding trees. The MSA does not contribute to the visible features of the base because of the low stature of the buildings. The predominant visual impression of the base is industrial and administrative; however, there are small parks and open land in the golf courses. There are no natural areas, unique landscapes, or other highly valued aesthetic features on or near the base.

3.10 CULTURAL RESOURCES

3.10.1 Definition of Resource

Cultural resources consist of prehistoric and historic districts, sites, structures, artifacts, or any other physical evidence of human activities considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. Cultural resources can be divided into three major categories: archeological resources (prehistoric and historic), architectural resources, and traditional cultural resources. Archeological resources are locations and objects from past human activities. Architectural resources are buildings and structures that remain standing. Traditional cultural resources may include archeological sites, buildings, prominent topographic features, objects, habitats, plants, animals, and minerals that hold importance or significance to Native Americans or other ethnic groups in the persistence of traditional culture.

The significance of such resources relative to the Native American Graves Protection and Repatriation Act (NAGPRA) and/or eligibility for inclusion in the NRHP is considered part of the environmental assessment process. The process generally relies on the regulations and procedures set forth in 36 CFR 800, which implements Section 106 of the NHPA, as amended. Section 106 requires federal agencies with jurisdiction over a federal, or federally assisted or federally licensed undertaking to consider the effects of that undertaking on properties in, or eligible for inclusion in the NRHP. Prior to approval of the proposed action, Section 106 requires that the ACHP be afforded the opportunity to comment.

3.10.2 Historical Context

3.10.2.1 *Regional History*

Prehistoric Period

Prehistoric occupation in the Mid-Atlantic region, including eastern Maryland where Andrews AFB is located, is conventionally divided into three major periods that reflect technological and social adaptation and development. These periods are the Paleo-Indian, Archaic, and Woodland. The Archaic and Woodland periods are further divided into Early, Middle, and Late subperiods.

Paleo-Indian period (10,000 – 7,500 B.C.) sites are uncommon in the Mid-Atlantic region, likely due in part to poor preservation conditions, the subsequent rise in sea levels, and the nomadic nature of the Paleo-Indian culture. Sites from this period are characterized by the presence of finely crafted, fluted stone projectile points, usually made of high quality cryptocrystalline stone such as chert or jasper. The Archaic period (7,500 – 2,000 B.C.) is marked by the onset of a gradual warming period. This climatic change brought about technological and cultural adaptations. The Early Archaic subperiod (7,500 – 6,000 B.C.) is considered to share some continuity with the Paleo-Indian period and serves as a transitional phase as new, smaller, projectile point styles are introduced (Custer 1989; Gardner 1974). During the Middle Archaic subperiod (6,000 – 4,000 B.C.) food technologies change, including the introduction of ground

stone tools for food preparation and an increased reliance on fishing and shellfish gathering. A large increase in population and social complexity occurs during the Late Archaic subperiod (4,000 – 2,000 B.C.), also known as the Terminal Archaic or Transitional period. Settlement size increases, large base camps are established, and trading networks appear at this time.

The Woodland period (2,000 B.C. – A.D. 1600) is defined by the introduction of pottery across the Mid-Atlantic region. Throughout the Early and Middle Woodland subperiods (500 B.C. – A.D. 900), semi-sedentary base camps similar to those found during the Late Archaic shifted from small creek floodplains to large river floodplains, perhaps setting the stage for the incorporation of horticulture (Snyder and Gardner 1979). By the Late Woodland subperiod (AD 900 – 1600), horticulture became a significant part of the overall subsistence system. The adoption of horticulture in eastern North America prompted the development of nucleated village settlements in riverine settings where flood plains were most conducive to crop production. At the time Europeans arrived in what is today Maryland, the land was occupied by groups of Algonquian-speaking Native Americans. Piscataway groups are reported to have lived in the area of Andrews AFB during the Colonial period, while the Mattapaneints lived in the area of what is now the Davidsonville Transmitter Station (Moeller et al. 1995).

Prehistoric artifacts dating from the Archaic through Woodland periods have been recovered from sites located on the Andrews AFB main base, although these sites did not retain sufficient integrity to be eligible for inclusion in the NRHP. The area along the Patuxent River, near the Davidsonville Transmitter Station, is rich in prehistoric archeological sites that date from the Paleo-Indian period through Late Woodland subperiod.

Historic Period

The MHT, which serves as the SHPO, has established four major periods of development into which Maryland history can be organized: Contact and Settlement; Rural Agrarian Intensification; Agricultural and Industrial Urban Dominance; and the Modern Period (MHT 1986).

The earliest historic period, the Contact and Settlement period (1680 – 1750), marks the arrival of the first Europeans in Maryland. The earliest European settlers lived along the banks of the larger rivers that flowed into Chesapeake Bay. The first land grant for Prince George's County was made in the late 17th century, and the county established in 1696. There were few large plantations within the county during this period (Virta 1984). Towns developed slowly in the project area region; however, the population in the area tripled between 1700 and 1750, in part due to increased stability and prosperity during this period (Ware 1990). The area that is now Andrews AFB was originally a land grant called 'The Chance,' which had been conveyed to the Calvert family in 1712. The Calvert family residence appears for the first time in the tax records of 1798. The growth of Prince George's County during the period of Rural Agrarian Intensification (1750 – 1815) was similar to that of the rest of the region. During this period, the somewhat fluid economic and social situation stratified and the plantation system solidified (Virta 1984). Crop diversification became important during this period although tobacco remained the

area's most important cash crop. The Chance land grant continued to be farmed during this period.

At the beginning of the period of Agricultural and Industrial Urban Dominance (1815 – 1930), few farm villages populated the area. After the Civil War, during which Maryland remained in the Union but was sympathetic to the South, the slave economy upon which the plantation and labor-intensive tobacco-growing system was built, collapsed. The large plantations were broken up into small tenant farms worked by people of both African and European decent and free black communities sprang up in the region. Smaller farms became more important, slowly replacing the plantation system. The Chance, now named 'Belle Chance', was a modest, but thriving, family plantation. The original 1798 family residence was likely replaced sometime in the nineteenth century, but records confirming this are unclear. In 1910, the family home at Belle Chance burned and was replaced in 1912 with the present concrete mansion (Moeller et al. 1995). During the Modern period (1930 – Present) the City of Baltimore became one of the pre-eminent municipalities on the eastern seaboard. Prince George's County remained rural throughout most of this period, consisting mainly of small towns and farms, and has only recently come under the heavy influence of Baltimore and Washington, D.C., and has developed as a suburb of those two cities (Virta 1984). In 1942, President Franklin Roosevelt ordered, through the War Department, that the Belle Chance property be condemned for airport construction, and Camp Springs airfield was erected.

3.10.2.2 *Installation*

Andrews AFB was established as a military facility after the Pearl Harbor invasion of 1941. In two building phases stretching between 1941 and 1945, the U.S. Army Corps of Engineers erected runways, taxiways, support buildings and infrastructure, as well as extensive operating facilities and base housing. Originally named Camp Springs Army Air Field, the installation was renamed Andrews Army Air Field after General Frank H. Andrews in early 1945.

Andrews AFB's early missions included serving as a control base (1943), as a training facility for tactical units of fighter aircraft pilots headed to overseas assignments (1944), and by 1946 as the temporary headquarters for Strategic Air Command before its transition to Offutt AFB, Nebraska (1949) (Office of History, 1776th Air Base Wing 1989; Craven and Cate 1955). After the transition, the Military Air Transport Service (MATS) then became host command at Andrews AFB (Real property cards [Building 1535]; Office of History, 1776th Air Base Wing 1989).

Throughout the 1950s, Andrews AFB continued its mission of air defense. In 1950, the 121st ANG at Andrews AFB provided readiness support for the Korean War in the form of immediate air defense duty for the Continental Air Command. Air Defense Command (ADC) built onto the ANG area with construction of a separate readiness area and hangar, munitions storage, a flight training simulator building, and a jet fuel tank farm. Between 1954 and 1956, ADC erected an Aircraft Control and Warning (AC&W) command and control center intended to fill air defense intelligence, communication and command needs in the years immediately preceding the Semi-Automated Ground Environment (SAGE) (Military Air Transport Service 1956, Master plans, 1st

and 2nd phases). At the close of the 1950s, ADC made several more advances at Andrews AFB by expanding buildings and erecting new storage compounds for nuclear weapons (Andrews AFB 1995). At the turn of the decade, during 1960-61, the Air Force replaced the AC&W command and control center with the SAGE direction center at Fort Lee, Virginia. Today, the 121st ANG continues at Andrews AFB as the Washington, D.C. ANG.

Similarly, the MATS established itself as a command at the base to train B-25 bomber crews for combat readiness in the 1950s. After 1957, the Headquarters Command coordinated the presidential air fleet and the arrival of foreign dignitaries, and housed Air Force One at the installation. Headquarters Command was disestablished in 1976 and reorganized under the Military Airlift Command (MAC). Air Mobility Command (AMC) was established June 1, 1992, when elements of both MAC and Strategic Air Command were combined. Today, AMC's special airlift role continues to be the primary mission of the command at Andrews AFB.

3.10.3 Existing Conditions

3.10.3.1 *Regional Conditions*

Andrews AFB encompasses 4,346 acres centrally located between the Potomac River to the west, and the Patuxent River to the east, both within seven miles of the base. Both rivers drain southward into Chesapeake Bay, and the headwaters of Piscataway Creek, an important tributary of the Potomac River, are situated within the immediate environs of the base. This physiographic area would have been attractive to prehistoric inhabitants of the region and Archaic through Woodland period groups are known to have intensively exploited these riverine environments. As such, there is a high probability that the immediate environs of the base were utilized by prehistoric groups for habitation and/or resource procurement. However, construction of Andrews AFB and development of the surrounding land has disturbed much of the area's soils. Therefore, the integrity of many historic and prehistoric archeological sites within the installation and surrounding area has been affected by development (National Park Service [NPS] 1993).

3.10.3.2 *Installation*

Archeological Resources

Since acquisition by the U.S. Air Force in 1947, several archeological investigations have been conducted within the Andrews AFB main base and support facilities (Andrews AFB 1996a; Harrell and Montagliani 1984; Moeller et al. 1995; NPS 1993; Tetra Tech 1999). Research conducted in 1995 (Moeller et al. 1995) identified 62 historic locations within the Andrews main base that could contain historic archeological resources. During subsequent field investigations, most of these locations were found to occur in developed areas. Although these locations have been subjected to disturbance through construction and improvements at the base, subsurface deposits may remain intact at some localities.

The initial surveys identified six archeological sites on Andrews main base (site numbers 18PR443 through 18PR448). Further evaluation of these sites determined that, at the main base,

only site 18PR447 – the Belle Chance site – is eligible for inclusion in the NRHP. The historic property known as the Belle Chance site consists of historic archeological deposits associated with three NRHP-eligible buildings. A prehistoric component was also recorded at Belle Chance, but this component does retain sufficient integrity to be considered eligible (Tetra Tech 1999).

In 2003, an Integrated Cultural Resources Management Plan (ICRMP) was prepared for Andrews AFB to provide guidance for the effective and efficient management of cultural resources as an integral part of the Base Comprehensive Plan, as required by Air Force Instruction (AFI) 32-7065, Cultural Resources Management, for the five-year period beginning in fiscal year 2002 (Andrews AFB 2003b). Under Sections 2.2.5 (Areas of Concern) and 3.3.2 (Consultation Procedures) of the ICRMP, the base is required to consult with the MHT concerning the necessity for a cultural resources inventory survey prior to an undertaking in an area not previously surveyed as part of their Section 110 responsibilities.

An archeological survey of the proposed APE was conducted by R. Christopher Goodwin and Associates in 2008 (Markell et al. 2008). The systematic survey of the APE revealed that the area had been impacted approximately 50 years ago and that no archeological properties are present.

Architectural Resources

At present there are more than 1,180 buildings or structures within the Andrews AFB facility. These include administrative facilities; aircraft hangars; warehouses; fuel storage facilities; ordnance storage facilities; family and bachelor housing; medical facilities; morale, welfare, and recreational facilities; schools; and religious facilities. The 113 Wing occupies facilities on the east and west sides of Andrews AFB, encompassing approximately 103 acres and includes the primary cantonment area, munitions storage area, and 201st Airlift Squadron Area. The ANG Readiness Center is located in the northeast portion of Andrews AFB and occupies approximately 10 acres.

A historic architectural survey was conducted on all 104 standing structures built before 1947 (Cullinane 1994). The investigation concluded that only Belle Chance (18PR447) and Chapel II were potentially eligible for inclusion in the NRHP. Because of a substantial loss of integrity, Chapel II was later determined to be ineligible (Andrews Air Force Base 1996a, 2003). The Belle Chance historic property consists of three NRHP-eligible buildings: (1) a Colonial Revival, 2 ½-story, hip-roof, concrete mansion with a one-story kitchen wing; (2) a storage shed; and (3) a garage (Building Numbers 1966, 1967, and 1968), and are associated with the surrounding historic archeological site (18PR447). A base-wide inventory of Cold War era buildings and structures was conducted in 1995 (Weitze 1996). Of the 28 properties evaluated, only one building, the ANG Alert Hangar (Building 3032) – located with in the 113th Air Wing Primary Cantonment Area – was recommended as potentially eligible for inclusion in the NRHP. The MHT, however, did not concur that Building 3032 was eligible (Andrews AFB 2003b). Finally, Parsons inventoried 16 individual Cold War properties and four housing districts on Andrews AFB in 2002 in preparation for the revised ICRMP. None of the resources studied was recommended eligible for listing in the NRHP.

Since the buildings to be demolished under the Proposed Action are not recommended eligible for listing in the NRHP, there would be no impact to architectural historic properties. According to correspondence received April 30, 2007 (Cole, pers. communication), the MHT has concurred that the buildings are not historic and do not meet the criteria for eligibility in the NRHP. Further consideration of these buildings is not warranted (Appendix B).

3.11 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

3.11.1 Definition of Resource

Socioeconomics is the study of the prevailing population, income, employment, and housing characteristics of a community or area of interest. In this document, socioeconomics refers to an examination of those characteristics and the effects, if any, that would occur to them upon completion of a proposed action compared to what would have occurred anyway.

Environmental Justice is the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of Federal, state, local, and tribal programs and policies. EO 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* issued in 1994, tasks Federal agencies with the responsibility to provide this assurance as part of the NEPA decision making assessments.

3.11.2 Existing Conditions

The ROI for socioeconomics and environmental justice include the Andrews AFB Census Designated Place (CDP) which is within Prince George's County. Baseline trends for the ROI are compared to those at a state and national scale.

3.11.2.1 *Population and Employment*

Population changes between 1990 and 2000 are shown in Table 3-2. The Andrews AFB CDP actually decreased in population; however this may reflect enrollment trends and mission changes at Andrews AFB. The county level population growth was consistent with that of the state and national levels.

The per capita income within the ROI is shown in Table 3-3. Andrews AFB CDP is substantially lower than that of the county, state, or nation. According to the 2000 Census, management, professional, and related occupations employed the largest percent of the civilian population in the U.S. (33.6), Maryland (41.3), and Prince George's County (38.9). The educational, health, and social services industry was the largest employer in each of these areas (USCB 2001b).

Table 3-2. Population Changes Between 1990 and 2000 Census.

Area	1990 Census Population	2000 Census Population	Percent Change
Andrews AFB CDP	10,228	7,925	-22.5
Prince George's County	729,268	801,515	9.9
State of Maryland	4,781,468	5,296,486	10.8
U.S.	248,709,873	281,421,906	13.2

Sources: United States Census Bureau (USCB) 2001a; USCB 2001b; USCB 2000c; USCB 1990; USCB 2000.

Table 3-3. Per Capita Income.

Area	Per Capita Income (2000)
Andrews AFB CDP	16,520
Prince George's County	23,360
Maryland	25,614
U.S.	21,587

Source: USCB 2000b

3.11.2.2 *Environmental Justice*

The demographic profile of Andrews AFB consists of 65.3 percent White, 22.8 percent Black or African American, 3.2 percent Asian, and less than 5 percent of some other race or a combination of races. Hispanic or Latino ethnicity (of any race) accounts for 8.7 percent of the base population (USCB 2000a). Andrews AFB is not considered an area of concentrated minority.

2000 Census data shows that only 2.4 percent of individuals at Andrews AFB are living below the poverty level. This is substantially lower than Prince George's County (7.7 percent), the State of Maryland (8.5 percent), and the national level (12.4 percent) (USCB 2000c). Andrews AFB is not considered an area of extreme poverty.

3.12 HAZARDOUS MATERIALS AND WASTES

3.12.1 Definition of Resource

Hazardous materials include, but are not limited to, hazardous substances, hazardous wastes, or any materials that pose a potential hazard to human health and safety or the environment due to their quantity, concentration, or physical and chemical properties. Hazardous wastes are products characterized by their ignitability, corrosiveness, reactivity, and toxicity. Hazardous waste includes any waste which, due to its quantity, concentration, or physical/chemical/infectious characteristics, may either (1) cause or significantly contribute to an increase in mortality, serious irreversible illness, or incapacitating reversible illness; or (2) pose a substantial threat to human health or the environment. The ROI for hazardous materials and wastes is Andrews AFB.

Hazardous materials and waste are managed in accordance with the following laws: Federal Water Pollution Control Act, CWA, Solid Waste Disposal Act, RCRA, CERCLA, CAA, and Federal Insecticide, Fungicide, and Rodenticide Act. The Maryland Solid Waste Management regulations provide for coordinated state solid waste management and a resource recovery plan (COMAR, Title 26, Subtitle 04). The Hazardous Waste Regulations (COMAR, Title 26, Subtitle 13) set forth the requirements for generators, transporters, owners, or operators of treatment, storage, or disposal facilities. Andrews AFB is required by EO 12088 (Federal Compliance with Pollution Control Standards) to comply with these acts and other applicable state regulations.

In addition to state and federal regulations, hazardous materials and wastes at Andrews AFB are managed in accordance with the Hazardous Material Planning and Response Plan (Andrews AFB 1998a) Hazardous Waste Management Support Plan at Andrews AFB (Andrews AFB 1996b), and the Spill Prevention, Control and Countermeasures Plan (Andrews AFB 1998b). The Environmental Protection Standards for Contracts prepared by the 316th Wing also provides guidelines for environmental and human health protection from hazardous materials and wastes.

3.12.2 Existing Conditions

Hazardous waste is generated and accumulated at facilities, such as aircraft hangars, vehicle maintenance areas and utility shops. Hazardous wastes generated at Andrews AFB are collected at initial accumulation points (IAP). Hazardous wastes may be stored at or near the point of generation in volume up to 55 gallons before they must be transferred to the designated hazardous waste storage area. Andrews AFB has a 90-day accumulation point for hazardous waste storage. Hazardous wastes are removed from the base and disposed of by licensed private contractors. Andrews AFB does not have a hazardous waste transfer, storage and disposal facility, nor does the base treat or directly dispose of any hazardous waste (Andrews AFB 2003a). There is no IAP or ERP sites at the existing MSA according to the ERP Office at Andrews AFB.

The ERP at Andrews AFB was established in 1975. It was formally known as the Installation Restoration Program. Its purpose is to investigate past hazardous and toxic materials storage and disposal activities at military installations. The mission of the ERP is to identify and clean up contamination resulting from past DoD use and disposal practices for the protection of human

health and the environment. There are no identified ERP sites at the existing or proposed location for the new MSA. The nearest ERP sites, Leroy Lane Landfill and Fire Training Area 4, are approximately 2,000 feet from the proposed location for the new MSA.

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4.0 ENVIRONMENTAL IMPACTS

This section presents the potential environmental impacts of implementing the proposed action, reuse alternative, and no action alternative described in Section 2.0. The potential impacts to the human and natural environment were evaluated relative to the existing environment described in Section 3.0. For each environmental resource or issue, anticipated direct and indirect effects were assessed, considering both short- and long-term project effects.

4.1 SAFETY

4.1.1 Significance Criteria

The significance of potential impact to safety is based on analysis of the proposed action and alternatives that have a potential to affect safety risks to the public, installation personnel, and property. Therefore, as outlined in Section 3.1, safety impacts would be significant if the potential for increased risk to safety from construction and demolition activities, airfield operations, antiterrorism, and management and use of munitions for installation operations and training activities exceeds the existing conditions.

4.1.2 Impacts

4.1.2.1 *Proposed Action*

Under the proposed action, the safety risks would be reduced by relocating and constructing a new MSA that would be properly sited, adequately sized, and correctly configured for the munitions storage requirements at Andrews AFB. Personnel in administrative areas would be adequately protected from explosive operations, QD waivers would not be required, munitions could be properly stored in containers, and munitions storage outside would not be required after implementation of the proposed action. Construction of the new MSA to meet the design standards specified by the ESB would reduce the existing safety risks to the public, installation personnel, and property.

Andrews AFB employs a rigorous site selection process prior to the approval of new construction on the base. The 316 Wing adopted a set of environmental standards in 2006 as a guide to help contractors and base personnel adhere to all environmental regulations pertaining to any work that could pose harm or inflict damage to the natural environment of Andrews AFB. Strict adherence to these environmental standards and AFOSH regulations should not increase the existing safety risks for construction and demolition activities associated with the proposed action. Another part of the site selection process at Andrews AFB examines whether the proposed construction would adversely affect navigable airspace by creating an obstruction as defined in 14 CFR 77. As illustrated in the design drawings (see Figure 2-1), the proposed action would not be constructed within the clear zone boundaries. Therefore no change to airfield operations would occur.

Security conditions would be improved for operation of the new MSA due to implementation of DoD Antiterrorism Standards. Design standards, lacking for the existing MSA, for installation of security fences and lighting, communications, and intrusion detection systems would be implemented in accordance with Antiterrorism/Force Protection requirements.

Explosives safety for management and use of munitions would be enhanced under the proposed action. Relocation of the MSA would eliminate the requirement of transporting munitions on major roadways from the west side of the airfield to the east side for servicing aircraft.

There would be no activities associated with the proposed action that would increase risks to safety above the existing conditions. Implementation of the proposed action would improve safety conditions at Andrews AFB.

4.1.2.2 *Alternative 1*

Under the alternative to construct a new MSA and reuse the existing MSA for compatible uses, safety considerations would remain the same as for the proposed action. The construction and operation of the new MSA would improve safety conditions at Andrews AFB. Authorization of acceptable contaminant risks from the ERP Office at Andrews AFB would ensure personnel safety prior to reuse of the MSA buildings. This alternative defines appropriate uses of the MSA buildings would be for general storage and warehousing of miscellaneous equipment. The reuse would not be authorized by ERP Office unless site surveys and investigation of historical operations indicated no safety hazards to personnel or property.

4.1.2.3 *No Action Alternative*

Under the no action alternative, a new MSA would not be constructed and baseline safety conditions at Andrews AFB would remain unchanged. The administrative/personnel functions building would remain inadequate for protecting personnel from explosive operations. Munitions requirements would continue to exceed design limits of the current MSA and QD violations would continue to require ESB waivers.

4.2 AIR QUALITY

4.2.1 Significance Criteria

Any impacts to air quality would be considered significant if pollutant emissions associated with the proposed action: caused, or contributed to a violation of any national, state, or local ambient air quality standard; exposed sensitive receptors to substantially increased pollutant concentrations; or exceeded any significance criteria established by the SIP.

4.2.2 Impacts

4.2.2.1 *Proposed Action*

Implementation of the proposed action would temporarily increase criteria air pollutants in the immediate area from demolition and construction of the munitions facility. Construction projects

typically occur in three phases: demolition, site grading, and building. Ordinary activities for these phases include site preparation, earthmoving, general land clearing, cut and fill operations, trenching, soil compaction, grading, and adding improvements such as structures and facilities. Emissions generated from these activities include: combustion emissions (VOC, NO_x, CO, SO_2, PM_{10}) from mobile heavy-duty diesel- and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips; and fugitive dust (PM_{10}) from soil disturbance. O_3 is not directly released, but formed when VOC combine with NO_x. In addition, appropriate air quality permits would be obtained if necessary after determining requirements for stationary emission sources.

The total area disturbed at the new site would be approximately 7 acres and construction would last for approximately 12 months. Emissions estimates for the proposed action were calculated using the URBEMIS2002 model and methods outlined in the Guide to Air Quality Assessment (El Dorado County 2002). The estimated emissions are considered negligible and are not expected to violate *de minimis* levels or standards from the SIP, therefore, a conformity determination is not required (Table 4-1). In addition active dust control measures such as watering soil stockpiles would be implemented during construction and demolition activities.

Table 4-1. Air Emissions from the Proposed Activities.

	Proposed Emissions (tons per year)				
	VOC	**NO_x**	**CO**	**SO_2**	**PM_{10}**
Demolition	0.07	0.68	0.46	0.00	0.16
Site Grading	0.26	1.64	2.14	0.00	0.19
Construction	2.06	6.60	7.37	0.00	0.27
Proposed Project Total	2.39	8.92	9.97	0.00	0.62
De minimis levels	50	100	n/a	100	n/a

4.2.2.2 *Alternative 1*

Implementation of Alternative 1 would temporarily increase criteria air pollutants in the immediate area. The proposed emissions would be slightly less than those proposed from the proposed action, since demolition would not occur. All air quality impacts would cease with construction.

4.2.2.3 *No Action Alternative*

Implementation of the No Action Alternative would not change the existing air quality conditions at Andrews AFB.

4.3 NOISE

4.3.1 Significance Criteria

An increase in noise exposure levels to or above 73 dB DNL (24-hour average sound level) for one year (level that could cause hearing loss in a portion of the general public) would be considered a significant impact (U.S. Army 1978).

4.3.1.1 *Proposed Action*

Noise associated with construction of the new MSA and demolition of the existing MSA would be temporary, site specific, and cease at the completion of these activities. Heavy machinery, the major source of noise would occur during daylight hours when occasional loud noises are more tolerable. Based on review of the installation map, there are no sensitive noise receptors (e.g., residential areas, hospitals, churches) within 4,000 feet of the project areas. In addition, the existing MSA and proposed location for construction of the new MSA are within elevated noise contours (65-75dB) from airfield operations. Therefore, no impact to sensitive receptors would be expected as a result of implementing the proposed action or alternative. In accordance with the Andrews AFB Environmental Protection Standards for Contracts (Andrews AFB 2006a), provisions would be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work-hour controls and proper maintenance of muffler systems.

An analysis of noise from dump trucks, graders, backhoes, bulldozers, rollers, and other heavy trucks that would be used in the construction and demolition activities indicated that the outdoor sound level for all equipment would be approximately 66 dBA at 400 feet from a composite point source such as the construction and demolitions sites (Harris 1998). This is based on using the standard noise reduction per doubling of distance. Indoor sound levels would be approximately 20 dBA less. These levels would not result in short-term noise impacts from implementation of the proposed action. Upon completion of the construction and demolition activities, the noise exposure would return to existing levels, which are dominated by aircraft operations. Therefore, no long-term or major impact to the noise environment would occur from implementing the proposed action.

4.3.1.2 *Alternative 1*

Under the alternative to construct a new MSA and reuse the existing MSA for compatible uses, noise considerations would remain the same as for the proposed action. However, there would be no measurable noise impacts associated with reuse of the existing MSA for compatible uses. Therefore, no significant impacts would result from implementation of this alternative.

4.3.1.3 *No Action Alternative*

Under the no action alternative, baseline conditions would continue at Andrews AFB. There would be no noise impacts as a result of this alternative.

4.4 LAND USE

4.4.1 Significance Criteria

The significance of potential land use impact is based upon the degree of sensitivity to land use changes affected by a proposed action. Typically, land use impacts would be considered significant if they: (1) violate or otherwise are inconsistent with adopted land use plans or policies; (2) undermine the viability of a preferred existing land use activity; (3) create threats to public health, safety, and welfare of adjacent or nearby land users; or (4) conflict with a fundamental mission of an installation.

4.4.2 Impacts

4.4.2.1 *Proposed Action*

Under the proposed action approximately 7 acres of land would be reclassified from open space to industrial for construction of the new MSA. A similar quantity of land would be reclassified from industrial to open space after demolition of the existing MSA and revegetation of the site. The placement of a new industrial area adjacent to open space land use would be consistent with the land use functional relationship analysis presented in the General Plan. The site selection process employed by 113 CES and 316 CES has taken several planning factors into consideration to ensure that the proposed activities are consistent with the Andrews AFB General Plan and compatible with existing land uses in the vicinity. There would be no impacts to land use outside the base boundaries. The proposed construction and demolition activities would not cause Prince George's County to alter its planning assumptions and recommended land uses. Since implementation of the proposed action would not alter the local land use plan, no change to the General Plan would be necessitated. The proposed action would not impact aircraft operational capabilities as specified in the Andrews AFB AICUZ. Therefore, implementation of the proposed action would not result in significant impacts to land use at Andrews AFB

4.4.2.2 *Alternative 1*

The potential impacts to land use under the alternative to construct a new MSA and reuse the existing MSA for compatible uses would be similar as described for the proposed action. Use of the old MSA would generally remain unchanged since the buildings would be reused for compatible uses. The land use designation would likely remain as industrial if the buildings were used for general storage and warehousing of miscellaneous equipment. Therefore, implementing this alternative would have negligible impacts on land use at Andrews AFB.

4.4.2.3 *No Action Alternative*

Under the no action alternative, a new MSA would not be constructed and baseline conditions for land use would remain unchanged.

4.5 GEOLOGICAL RESOURCES

4.5.1 Significance Criteria

The impacts to geologic features, soil resources, and topography from constructing a new MSA at Andrews AFB were considered in relation to potential geologic hazards, soil limitations, and topographic limitations for evaluating potential impacts to geologic resources. Impacts would be considered significant if construction activities were located in or near a geologically hazardous area, reduced soil capabilities in the ROI, or changed the topography in the area. The evaluation of potential impacts is based on the siting and area of disturbance of the proposed activities.

4.5.2 Impacts

4.5.2.1 *Proposed Action*

Under the proposed action, construction of the new MSA and demolition of the current MSA would have short-term minimal impacts on geological resources at Andrews AFB. There are no site limitations associated with geological resources. The new construction would disturb approximately 7 acres for development of roads, parking areas, buildings, utilities, and security fencing. No subsurface excavation would be conducted and approximately 3 acres would be restored to native vegetation following demolition of the current MSA. Construction activities for the new MSA involving ground disturbances would include grading and clearing; however, disturbances would not occur at depths that could potentially impact the geology of the area. The grading activities would be conducted to level the site for development of facilities, but would not change the topography on the installation. Cut and fill activities would be balanced to the greatest extent practicable to minimize soil movement. Soils would be disturbed during construction activities associated with the proposed action. However, BMPs would be implemented during construction to minimize impacts to soils associated with grading and clearing activities. Erosion and sedimentation control measures (such as silt fences, straw bales, sediment traps, application of water sprays, revegetation of disturbed soils, and limiting soil disturbance to the project footprint) would be implemented to minimize impacts to soils. In addition, guidelines specified in the Andrews AFB Environmental Protection Standards for Contracts (Andrews AFB 2006a) would be followed to avoid or minimize potential impacts to geological resources.

4.5.2.2 *Alternative 1*

Under the alternative to construct a new MSA and reuse the existing MSA for compatible uses, potential impacts to geological resources would be similar as described for the proposed action.

There would be no change to existing conditions for geological resources at the current MSA under this alternative.

4.5.2.3 *No Action Alternative*

Under the no action alternative, a new MSA would not be constructed and baseline conditions for geologic resources at Andrews AFB would remain unchanged.

4.6 WATER RESOURCES

4.6.1 Significance Criteria

The analysis of water resources includes all surface and groundwater resources, wetlands, and floodplains. Significant impacts to water resources could potentially occur if implementation of the proposed action resulted in changes to water quality or supply, threatened or damaged unique hydrologic characteristics, endangered public health by creating or worsening health hazards, or violated established laws or regulations. Wetlands would be impacted if the proposed action resulted in a net loss of wetlands on Andrews AFB. Impacts of flood hazards on proposed actions would be significant if such actions are proposed in areas with high probabilities of flooding.

4.6.2 Impacts

4.6.2.1 *Proposed Action*

Surface Water

Under the proposed action, construction of the new MSA and demolition of the current MSA would not result in long-term negative impacts to water resources at Andrews AFB. However, there could be short-term and minor impacts to surface waters of Piscataway Creek downstream of the intermittent stream on the proposed site for construction of the new MSA. Potential impacts would be avoided or minimized in accordance with the Andrews AFB Environmental Protection Standards for Contracts (Andrews AFB 2006a). Prior to construction, the contractor would submit to MDE, after coordination with 316 CES, a Notice of Intent for coverage under the Maryland General Stormwater Permit for Construction Activities. The proposed action would increase the amount of impervious surfaces on the installation with the new construction, but would reduce the impervious services by a similar amount with demolition of the current MSA. The net effect would probably be a slight increase in the amount of surface water runoff at Andrews AFB. A Stormwater Pollution Prevention Plan would be developed by the contractor and maintained at the job site in accordance with the general permit. The contractor would prepare a storm water management plan and sediment and erosion control plan in accordance with the Maryland Storm Water Management Guidelines for State and Federal Projects (MDE 2001) and 2004 Maryland Erosion and Sediment Control Guidelines for State and Federal Projects (MDE 2004). BMPs implemented during construction to avoid or minimize potential impacts to downstream surface waters would include the use of silt fences, covering of soil stockpiles, use of secondary containment for the temporary storage of hazardous liquids,

establishment of buffer areas near wetlands and intermittent streams, and prompt revegetation of disturbed areas.

Ground Water

The proposed construction activities would not impact regionally significant aquifers. No personnel increase is associated with the proposed action that could potentially change the water demand at Andrews AFB and ground water is not used at Andrews AFB for its drinking water supply. Excavation for construction activities would not intersect the shallow groundwater table; activities would be approximately within five feet of the ground surface for grading and installation of utilities.

Wetlands

The new MSA has been designed to avoid impacts to the approximately 0.5 acres of wetlands in the proposed location for construction of the new MSA and there are no wetlands at the current MSA site. Therefore, implementation of the proposed action would not impact wetlands at Andrews AFB. The placement of buildings and access roads would avoid dredge and fill activities for construction of the new MSA. The only interaction of wetlands and construction would occur at the narrow (approximately 5 feet wide) intermittent drainage leading to Piscataway Creek. The sloping topography (240 feet to 270 feet MSL) of the site would allow the access road to be bridged across the drainage without impacting the wetlands. The utilities lines would either be tunneled under the drainage or bridged across the drainage to also avoid potential wetland impacts. Andrews AFB would coordinate with MDE with a pre-construction notice to obtain regulatory approval for the proposed action under the nationwide permit authority.

Floodplains

No floodplains occur in the proposed construction site or the current MSA site. Therefore, there would be no impacts to floodplains from implementing the proposed action.

4.6.2.2 *Alternative 1*

Under the alternative to construct a new MSA and reuse the existing MSA for compatible uses, potential impacts to water resources would be similar as described for the proposed action. The increase in impervious surfaces on the installation created with the new construction would not be partly offset by the reduction in the impervious services at the current MSA by reuse of the facilities. However, potential impacts would be avoided or minimized as described for the proposed action in accordance with Maryland regulations and Andrews AFB Environmental Protection Standards for Contracts. Therefore, no significant impacts would result from implementation of this alternative.

4.6.2.3 *No Action Alternative*

Under the no action alternative, a new MSA would not be constructed and baseline conditions for water resources at Andrews AFB would remain unchanged.

4.7 BIOLOGICAL RESOURCES

4.7.1 Significance Criteria

Impacts to biological resources would be significant if would be impacted if implementation of the proposed action resulted in a change to vegetation communities or wildlife, including threatened or endangered species, at Andrews AFB. Changes that reduce the viability of native vegetation in the area or eliminate viable wildlife populations would be considered significant. In addition, impacts to biological resources would be significant if implementation of the proposed action reduced the viability of migratory birds at Andrews AFB.

4.7.2 Impacts

4.7.2.1 *Proposed Action*

Vegetation and Forests

Implementing the proposed action would result in minor impacts to vegetation and forests at Andrews AFB. Construction of the new MSA would require clearing approximately 7 acres or 6.7 percent of the mixed hardwood forest contiguous to the new MSA. The loss of forest land would not impact the forestry program because there is no commercial forest management at Andrews AFB. Landscaping associated with the new MSA construction, in accordance with the Andrews AFB Environmental Protection Standards for Contracts, would partly offset the loss of forests.

The long history (almost 50 years) of maintaining turf grass has resulted in minimal ecological value of vegetation resources present in the current MSA. Following demolition, the cleared site would be revegetated to match the surrounding landscape (mostly turf grass and street trees). Figures 4-1 and 4-2 show typical restoration that would be expected based on restoration of a demolished ammunition bunker at Andrews AFB in 1988. Natural or regionally significant plant communities; including forests do not occur in the current MSA and thus would not be impacted by the proposed demolition action. Consequently, no impact to vegetation and forests would be expected from implementing the proposed action.

Wildlife

Implementing the proposed action would not result in long-term impacts to wildlife resources at Andrews AFB. Construction of the new MSA would require clearing approximately 7 acres of the mixed hardwood forest at the proposed site and temporarily displace wildlife. However, the disturbance would be limited to the duration of construction activities and wildlife would be expected to settle in the remaining 112 acres of forest acreage contiguous to the new MSA.

Figure 4-1. 1988 Ammunition Bunker at Andrews AFB Prior to Demolition.

Figure 4-2. Restoration of 1988 Ammunition Bunker at Andrews AFB after Demolition.

Implementation of the proposed action would not impact the breeding potential or migratory pattern of migratory birds on Andrews AFB. Approximately 7 acres of forests would be cleared for construction of the new MSA; however, this area represents less than 0.4 percent of the forests on Andrews AFB and less than 0.00005 percent of the forests in Maryland. In addition, there are no forests of high ecological value on Andrews AFB (Maryland Department of Natural Resources 2003). The negligible effect resulting from the small size of the proposed action should make it unnecessary to redirect activities outside migratory bird breeding times.

Threatened and Endangered Species

Based on the 2001 INRMP (Andrews AFB 2001) and the 2005 threatened and endangered species update (Andrews AFB 2005a), no threatened or endangered species occur at the current MSA site or the site proposed for construction of the new MSA. The nearest state or federally listed plant species identified on the installation is in a different habitat type (old field), approximately 2,000 feet from the new MSA site, and more than 5,000 feet from the current MSA. Therefore, there would be no impacts to threatened or endangered species as a result of the construction and demolition activities associated with the proposed action.

4.7.2.2 *Alternative 1*

Under the alternative to construct a new MSA and reuse the existing MSA for compatible uses, potential impacts to biological resources would be similar as described for the proposed action. There would be no change to the existing conditions for biological resources at the current MSA. Therefore, no significant impacts would result from implementation of this alternative.

4.7.2.3 *No Action Alternative*

Under the no action alternative, a new MSA would not be constructed and baseline conditions for biological resources at Andrews AFB would remain unchanged.

4.8 TRANSPORTATION AND CIRCULATION

4.8.1 Significance Criteria

The significance of potential impact to transportation and circulation is based upon the degree of sensitivity to the LOS in the area affected by a proposed action. Impacts would occur if the inputs to LOS, such as traffic counts, roadway design and geometry, or signalization, were to change as a result of implementation of the proposed action. Additionally, the potential effect of the proposed action on the inventory of off-street parking is noted.

4.8.2 Impacts

4.8.2.1 *Proposed Action*

Implementation of the proposed action would result in slight, beneficial impacts to transportation and circulation at Andrews AFB. Relocation of the MSA to east side of the base would eliminate

the transportation of munitions from the old MSA to the east flight line servicing aircraft. Munitions would be delivered to the east flight line by a short crossing of the East Perimeter Road along a dedicated munitions route. The net result would be a reduction of vehicular trip generation. No change to the function of internal collector and secondary streets are proposed, and no change in roadway capacity or flow would be expected. Therefore, no changes to the LOS at Andrews AFB would be expected. The proposed action includes development of sufficient parking areas to accommodate the number of personnel expected for operations activities at the new MSA. Therefore no changes to off-street parking would be expected.

Slight disruptions to localized traffic patterns could occur as equipment and materials are brought to the project areas. These potential impacts would be temporary, occurring during the construction and demolition activities. Off the base, it is not anticipated that the proposed activities would cause either Prince George's County or the Maryland Department of Transportation to alter its planning assumptions and recommended roadway improvements as a result of implementation of this alternative. Therefore, implementation of the proposed action would not result in significant impacts to transportation and circulation at Andrews AFB.

4.8.2.2 *Alternative 1*

The potential impacts to transportation and circulation under the alternative to construct a new MSA and reuse the existing MSA for compatible uses would be similar as described for the proposed action. Reuse of the old MSA site would not require changes to the LOS and would probably result in decreased traffic in the area because of reduced daily activity expected at the site. No changes to the off-street parking in the area would be expected. Therefore, implementing this alternative would have negligible impacts on transportation and circulation at Andrews AFB.

4.8.2.3 *No Action Alternative*

Under the no action alternative, a new MSA would not be constructed and baseline conditions for transportation and circulation would remain unchanged.

4.9 VISUAL RESOURCES

4.9.1 Significance Criteria

The significance of a change in visual resources is influenced by social considerations including public values placed on the resource, public awareness of the area, and general community concern for visual resources in the area. Visual impacts would be considered significant if implementing the proposed action or alternative heightened social concerns above baseline conditions for visual sensitivity, degree of public interest in visual resources, or concern over potential changes in the quality of visual resources at Andrews AFB.

4.9.2 Impacts

4.9.2.1 *Proposed Action*

Under the proposed action, relocation of the existing MSA to an unoccupied area of the base would not significantly change the visual resources at Andrews AFB. The new MSA would be screened visually by surrounding trees, similar to the conditions at the existing MSA, and the new construction would be implemented in accordance with the Andrews BACP. The low stature (single story) of the buildings proposed for the new MSA would not change the visual character or quality at Andrews AFB. Demolition of the existing MSA after relocation to the new site would change the immediate landscape from a complex of old mini-storage warehouse units to a grassy open space. Revegetation of the site after demolition would appear to most individuals as more aesthetically pleasing; however, the area changed comprises a small fraction (0.01%) of the land at Andrews AFB. Therefore, implementing the proposed action would have negligible impacts on visual resources at Andrews AFB.

4.9.2.2 *Alternative 1*

The potential impacts to visual resources under the alternative to construct a new MSA and reuse the existing MSA for compatible uses would be similar as described for the proposed action. The visual perception of the old MSA site would remain unchanged. Therefore, implementing this alternative would have negligible impacts on visual resources at Andrews AFB.

4.9.2.3 *No Action Alternative*

Under the no action alternative, a new MSA would not be constructed and baseline conditions for visual resources would remain unchanged.

4.10 CULTURAL RESOURCES

The construction of new buildings and facilities can have an adverse effect on historic properties through the disturbance of buried archeological deposits or through disturbance of the integrity of an existing historic building, district, or landscape. Earth-moving activities related to construction could impact the integrity of an archeological site or they could impact unmarked prehistoric or historic burials. New structures or buildings with architectural design elements that are incompatible with surrounding historic properties would impact the integrity, character, and/or feeling of the historic property.

Demolition of buildings and structures can also have an adverse effect by destroying historic architectural properties, and in the process of removing debris and subterranean features (e.g., foundations), in addition to impacting archeological deposits.

4.10.1 Significance Criteria

Numerous laws and regulations require that possible effects on historic properties be considered during the planning and execution of federal undertakings. These laws and regulations stipulate a

process of compliance, define the responsibilities of the federal agency proposing the actions, and prescribe the relationships among involved agencies. In addition to NEPA, the primary laws that pertain to the treatment of cultural resources during environmental analysis are the NHPA (especially Sections 106 and 110), the Archeological Resources Protection Act (ARPA), the American Indian Religious Freedom Act (AIRFA), and the Native American Graves Protection and Repatriation Act (NAGPRA).

Section 106 of NHPA requires that federal agencies give the ACHP, SHPO, and other interested parties a "reasonable opportunity to comment" on proposed actions. Federal agencies must consider whether their activities could affect historic properties that are already listed, determined eligible, or not yet evaluated under the NRHP criteria. Properties that are either listed on or eligible for listing in the NRHP are provided the same measure of protection under Section 106.

The following criteria have been established as guidance for evaluating potential entries to the NRHP. "Significance" in American history, architecture, archeology, and culture is granted to districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that meet at least one of the following criteria:

- an association with events that have made a significant contribution to the broad patterns of history (Criterion A);
- an association with the lives of persons significant in history (Criterion B);
- embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic value; or represent a significant and distinguished entity whose components may lack individual distinction (Criterion C); or
- have yielded, or may likely yield, information important in prehistory or history (Criterion D).

Resources less than 50 years of age must be evaluated under Criterion Consideration G: Properties That Have Achieved Significance in the Last Fifty Years. This criterion requires that such resources be "exceptionally important" to qualify for listing. Resources less than 50 years of age must also meet the criteria for resources 50 years or older (i.e., A, B, C, or D) and retain their integrity.

4.10.2 Impacts

4.10.2.1 *Proposed Action*

Archeological Resources

Given that the proposed location of the new MSA does not contain utilities and roads, the proposed activities would include development of an access road, utility systems, communications systems, intrusion detection system, security fencing, and security lighting, all of which require subsurface disturbance in addition to that necessary for the construction of foundations for the buildings themselves. Due to the potential for this undertaking to have an

effect on cultural resources, the undertaking is subject to the Section 106 process, which includes the identification of archeological sites and/or historic properties that might be located within the 15.29 ha (37.79 ac) Area of Potential Effects (APE).

Under Sections 2.2.5 (Areas of Concern) and 3.3.2 (Consultation Procedures) of the ICRMP (2003), the base was required to consult with the MHT concerning the necessity for a cultural resources inventory survey prior to any undertaking in an area not previously surveyed under Section 110. According to correspondence received April 30, 2007 (Cole, pers. communication), the MHT has concurred with the necessity of a Phase I survey to complete the Section 106 consultation process for this undertaking in accordance with 36CFR800.3(a). This Phase I survey was conducted by R. Christopher Goodwin and Associates in early 2008. The draft report revealed that the area had been impacted over 50 years ago and that no archeological properties are present (2008). Review of this report by the Maryland Historical Trust (letter dated 17 June 2008) resulted in concurrence that the proposed undertaking would have no effect on historic and archeological properties.

Additionally, even in the event of clearance for this construction after completion of the Section 106 process, it is possible that currently buried and unknown archeological resources may be uncovered during ground-disturbing activities. Should any archeological resources (historic and/or prehistoric) be encountered during earth movement or construction phases of the proposed action, the Andrews AFB Cultural Resources Manager and the MHT should be notified to ensure compliance with 36 CFR, Part 800.11. This action would include suspension of construction work until a qualified archeologist could determine the significance of the encountered resource(s).

Architectural Resources

The Proposed Action would involve the demolition of eight buildings in the current MSA (Figure 4-3 – Buildings Comprising the Current MSA; see Appendix A for photographic depictions). The buildings to be demolished are: Buildings 4942 (storage igloo), 2952 (storage igloo), 4962 (storage igloo), 4963 (storage igloo), 4964 (hazardous storage facility), 4971 (hazardous storage facility), 4972 (checkout and assembly), and 4982 (security guardhouse).

With buildings 4942, 4952, 4962, 4963, 4972, and 4982 constructed between 1958-1959, and buildings 4964 and 4971 constructed between 1961-1962, all eight buildings are nearing the 50 year mark, and may be 50 years of age or older at the time of demolition. Therefore, the buildings' National Historic Register eligibility under the standard criteria (A – D, only) for properties 50 years or older shall be considered.

The MSA compound was established at Andrews AFB in 1959 in preparation for receiving the MB-1 Genie, the world's first nuclear-armed air-to-air weapon. The Genie first became operational in 1957; production ended in 1962. In 1963, the MB-1 was redesignated AIR-2A. The Genie was powered by a Thiokol SR49 solid-fueled rocket motor and was the most powerful interceptor missile that the USAF ever deployed. As an early Cold War weapon, the Genie was an effective tool against potential enemy bombers (Boeing n.d.; Parsch 2007).

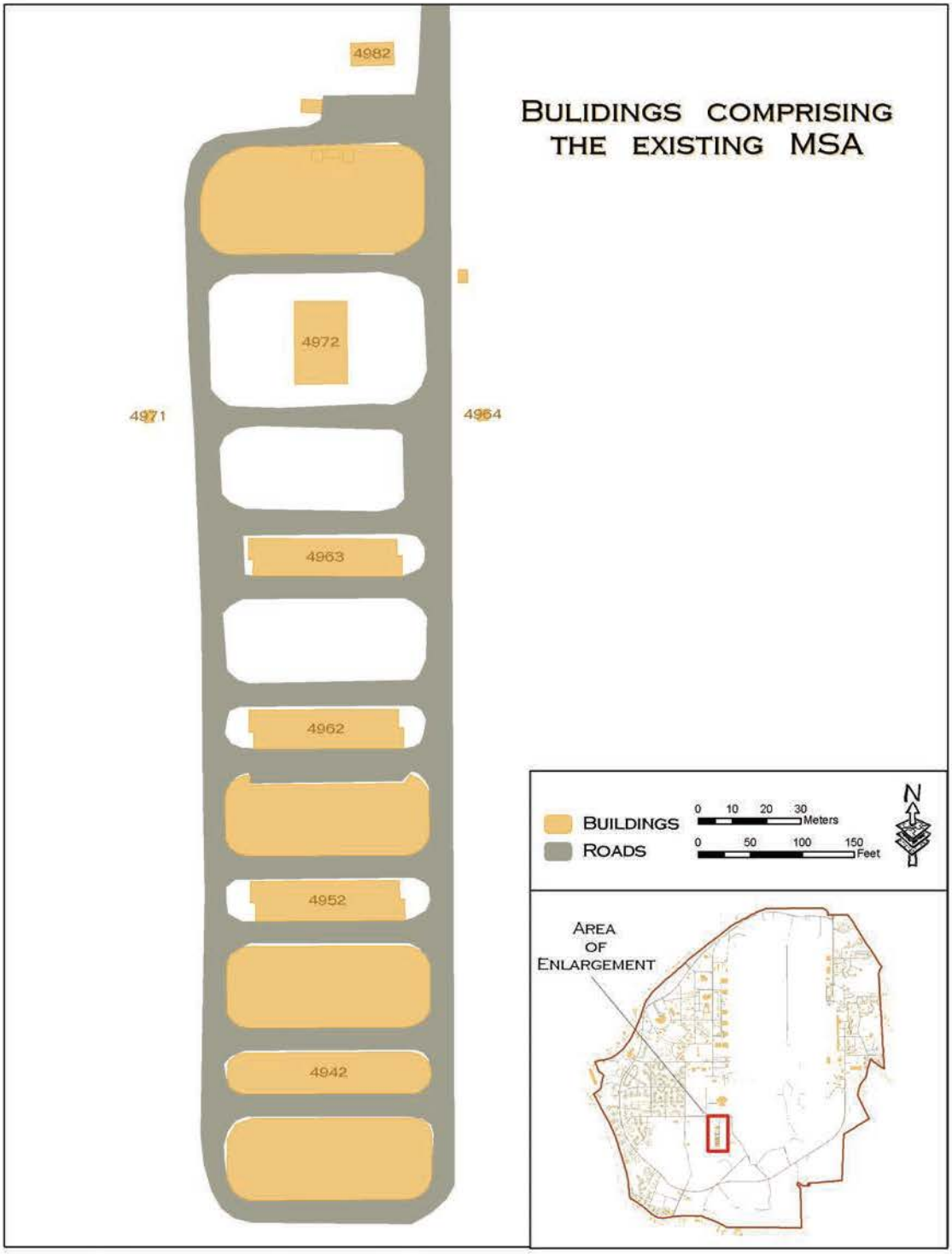

Figure 4-3. Buildings in the Existing MSA at Andrews AFB.

Although the Genie was an important weapon in the nation's early Cold War arsenal, the MSA compound buildings at Andrews AFB are not recommended eligible for listing in the NRHP under criteria A, B, C, or D. Those installations that were considered to be of "priority tactical importance" were the first to receive the MB-1 Genie. The MSA compound at Andrews AFB was one of the last compounds built and the USAF did not deploy the F-101B (the carrier for the MB-1 Genie) to Andrews AFB until mid-1959. Thus, it appears that Andrews AFB's association with the Genie is approximately two years (Weitze 1996:63), and that the base's role in this Cold War strategic system was not significant, relative to that of the "priority" bases (Criterion A). There is also no indication that the MSA compound at Andrews AFB is associated with the lives of significant persons (Criterion B). While the eight MSA buildings exhibit the characteristics of a special weapons storage compound (reinforced concrete and concrete-block construction, and use of sloped, free-standing earthen embankments), the buildings are utilitarian and lack distinctive architectural or engineering features. Therefore, they do not meet the requirements of Criterion C. Finally, it is unlikely that they have the potential to yield information important to prehistory or history (Criterion D).

4.10.2.2 *Alternative 1*

Archeological Resources

The implementation of Alternative 1, like the Proposed Action, would have no effect on archeological historic properties.

Architectural Resources

Since the buildings to be reused under Alternative 1 are not recommended eligible for listing in the NRHP and the MHT has concurred with this finding, there would be no impact to historic properties.

4.10.2.3 *No Action Alternative*

The no-action alternative would result in no potential adverse effects on archeological resources, known and unknown, at Andrews AFB. Furthermore, under the No Action Alternative, there would be no demolition or reuse of the eight MSA buildings, and since these buildings are not recommended eligible for listing in the NRHP and the MHT has concurred with this finding, there would be no impact from deterioration due to lack of necessary repairs.

4.11 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

4.11.1 Significance Criteria

NEPA provides no specific thresholds of significance for socioeconomic impact assessment. Significance varies, depending on the setting of the proposed action, but 40 CFR 1508.8 states that indirect effects may include those that are growth inducing and others related to induced changes in the pattern of land use, population density, or growth rate. Factors considered in

determining whether an alternative would have significant adverse impacts include the extent or degree to which its implementation would result in the following: (1) induce growth or concentrations of population that exceed official regional population projections; (2) induce substantial growth in an area, either directly or indirectly; (3) conflict with housing projections and policies set forth in the installation or County plans, (4) displace existing housing; (5) disrupt or divide the physical arrangement of an established community; or (7) caused a decrease in local or regional employment.

4.11.2 Impacts

4.11.2.1 *Proposed Action*

Implementation of the proposed action would not have significant impacts to the socioeconomics of the installation or the region. Given the economic health of the local economy, the associated costs with the demolition and construction activities would not significantly affect the area. Minor benefits may occur as workers from the surrounding area may be employed to implement the proposed action. The proposed action would not change employment or population levels at Andrews AFB.

The proposed action is not expected to create significantly adverse health or environmental impacts. No facilities with substantially high numbers of children are located in the proposed area and extreme poverty or concentrated minority populations were not identified within the ROI. Therefore, there are no environmental justice concerns.

4.11.2.2 *Alternative 1*

Implementation of Alternative 1 would not have significant impacts to the socioeconomics of the installation or the region. Potential impacts would be the same as those described for the propose action. The proposed location under Alternative 1 would be the same as that for the proposed action; therefore there are no environmental justice concerns.

4.11.2.3 *No Action Alternative*

Implementation of the No Action Alternative would not change the socioeconomics of the installation or the region.

4.12 HAZARDOUS MATERIALS AND WASTES

4.12.1 Significance Criteria

Hazardous materials and wastes would be impacted at Andrews AFB if the new MSA construction and existing MSA demolition activities resulted in a release of these materials into the environment. Potential releases could occur to the air, water, or soil, and releases that exceed federal and state guidance for protection of human health or environmental exposure would be considered significant.

4.12.2 Impacts

4.12.2.1 *Proposed Action*

Construction of the new MSA would include use of hazardous materials (fuels, solvents, etc.) and generation of wastes (RCRA solid waste disposal of construction and demolition debris) during the construction and demolition phases of the proposed action. However, the construction and demolition activities would be conducted in accordance with all federal, state, and local regulations pertaining to hazardous materials and wastes, as well as the Andrews AFB hazardous waste management support and hazardous material planning and response plans. Therefore, as required in the stated regulations, Andrews AFB Environmental Restoration program plans, and Andrews AFB Environmental Protection Standards for Contracts, use of hazardous materials and generation of wastes under the proposed action would not significantly impact human health or the environment. The nearest ERP sites (Leroy Lane Landfill and Fire Training Area 4) are approximately 2,000 feet from the proposed new MSA location; therefore, would not be impacted by the proposed action.

As in the current MSA situation, operation of the new MSA would require minimal use, storage, and generation of hazardous materials and wastes. Use and handling of munitions as hazardous materials is discussed under safety in Sections 3.1 and 4.1. Strict guidelines for explosives handling are followed for hazardous materials operations. Therefore, baseline conditions for hazardous material use and waste management would remain unchanged.

The existing MSA buildings were constructed in the 1950's and may contain hazardous materials (lead based paint, asbestos, etc.). The ERP Office at Andrews AFB would investigate historical operations and actions prior to demolition activities to determine specific requirements for protection of human health and environmental exposure from hazardous materials. Subsequently, the proposed demolition of the current MSA buildings would be conducted as necessary by licensed contractors in accordance with all appropriate state and federal regulations for the removal and disposal of all hazardous materials. Therefore implementation of the proposed action, including demolition of the existing MSA buildings, would not result in significant impacts to human health or the environment.

4.12.2.2 *Alternative 1*

Under the alternative to construct a new MSA and reuse the existing MSA for compatible uses, potential impacts to hazardous materials and waste management would be similar for operation of the new MSA as described for the proposed action. Therefore no significant impacts would result from implementation of this alternative.

4.12.2.3 *No Action Alternative*

Under the no action alternative, a new MSA would not be constructed and baseline conditions for hazardous materials and wastes at Andrews AFB would remain unchanged.

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5.0 CUMULATIVE IMPACTS

This section provides: (1) a definition of cumulative effects, (2) a description of past, present, and reasonably foreseeable actions relevant to cumulative effects analysis, (3) an assessment of the nature of interaction of the proposed action with other actions, and (4) a summary and evaluation of cumulative effects potentially resulting from these interactions.

The CEQ regulations stipulate that the cumulative effects analysis within an EA should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). Recent CEQ guidance in Considering Cumulative Effects affirms this requirement, stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with the proposed action (CEQ 1997). The scope must consider geographic and temporal overlaps among the proposed action and other actions. It must also evaluate the nature of interactions among these actions.

Cumulative effects are likely to arise when a relationship or synergism exists between a proposed action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in proximity to the proposed action would be expected to have more potential for a relationship than those more geographically separated. Similarly, actions that coincide, even partially, in time would tend to offer a higher potential for cumulative effects. To identify cumulative effects the analysis needs to address three fundamental questions:

- Does a relationship exist such that affected resource areas of the proposed action might interact with the affected resource areas of past, present, or reasonably foreseeable actions?
- If one or more of the affected resources areas of the proposed action and another action could be expected to interact, would the proposed action affect or be affected by impacts of the other action?
- If such a relationship exists, then does an assessment reveal any potentially significant impacts not identified when the proposed action is considered alone?

The scope of the cumulative effects analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. The base is included in the cumulative effects analysis to assess combined impacts of the proposed action with other reasonably foreseeable actions at the base. Actions that do not occur within or adjacent to this region are not considered relevant for cumulative effects analysis.

5.1 OTHER REASONABLY FORESEEABLE ACTIONS ON ANDREWS AFB

An EA has been prepared for the Air Sovereignty Alert Mission Beddown at Andrews AFB in support of Homeland Defense (Andrews AFB 2005b). This action includes construction of a permanent alert aircraft complex on the east flight line for homeland security and would receive munitions from the relocation of the MSA proposed in this EA. However, construction of the

alert aircraft complex is independent of the proposed action to relocate the existing MSA at Andrews AFB.

The General Plan (Andrews AFB 2003a) provides guidance for Andrews AFB's five-year Facility Development Plan. In addition the General Plan describes requirements for disposal of outdated and obsolete facilities to achieve excellence in facilities and quality of life for assigned personnel, as well as improve operational efficiency by demolishing substandard and inefficient facilities. The proposed facility developments or demolition plans are not associated with or dependent on implementation of the proposed action described in this EA.

The final 2005 Base Realignment and Closure (BRAC) Commission report became law on November 9, 2005, and its recommendations are to be executed no later than September 2011. The BRAC results represent the largest single employment growth activity in Maryland since World War II and contribute toward a more stable and increasingly knowledge-based economy. Approximately 400 new jobs will be added to Andrews AFB. Overall, growth resulting from BRAC 2005 will increase development pressures in the Baltimore-Washington, D.C. metropolitan area. However, the potential impacts for Andrews AFB and vicinity are expected to be minimal (Maryland Department of Business and Economic Development 2005).

5.2 SUMMARY OF CUMULATIVE EFFECTS

The analyses for this EA indicate that the proposed action for construction of a new MSA and demolition of the existing MSA would not result in, or contribute to, significant negative cumulative impacts to the resources in the region. In general there would be negligible effects for most resources and slight improvements for other resources. The scope of activities in the proposed action is consistent with base planning for supporting the mission at Andrews AFB.

6.0 SUMMARY OF FINDINGS

The proposed action would replace aging and inadequate buildings that are currently used for munitions storage with modern facilities that provide sufficient storage space and adequate protection for personnel operating the facilities. In addition relocating the MSA to an undeveloped area of the base would improve base safety by eliminating the current requirement for QD waivers and reducing the transport of munitions over the road network at Andrews AFB.

The *de minimis* emissions of air pollutants expected from the proposed action would not result in cumulative impacts, and air quality impacts would cease after construction and demolition activities. The proposed action would not change the noise environment and would be consistent with short-term and long-term land use planning at Andrews AFB.

No impacts, short-term or long-term, to geology, soils, and topography would occur under the proposed action. Design of the new MSA would meet all regulatory requirements for short-term and long-term protection of water resources. No cumulative effects would be expected to vegetation and forests or wildlife populations, including migratory birds, because of the small acreage of the proposed action. In addition no cumulative effects to biological resources would be expected because the proposed site for construction of the new MSA and the existing MSA site do not contain rare habitats or threatened or endangered species.

The proposed action would not impact visual resources at Andrews AFB or in the vicinity. Similarly, the proposed action would have no effect on historic or archeological properties; therefore, no cumulative impacts to cultural resources would be expected. The EA analysis indicated that the proposed action would not impact socioeconomics; therefore, no cumulative impacts would be expected. The proposed action would be implemented in accordance with applicable state and federal regulations to avoid potential impacts to hazardous materials and wastes; therefore, no cumulative impacts would be expected.

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7.0 SPECIAL PROCEDURES

The analysis in this EA indicated that implementation of the proposed action would not result in significant or cumulative impacts, short-term or long-term, to the resources evaluated. This was based on the absence or low probability for potential to impact most of the resources evaluated. However, the no impact determination for some resources was based in part or wholly on the implementation of BMPs, coordination with resource agencies, and/or coordination with the Andrews AFB natural and cultural resources manager. Environmental controls specified in the description of the proposed action and alternatives that would be implemented prior to and during the construction and demolition activities include the following measures.

- The construction and demolition activities would be conducted in accordance with BMPs specified in the Andrews AFB Environmental Protection Standards for Contracts. Among other BMP's, active dust control measures would be implemented during construction and demolition activities.
- If any archeological resources are encountered during construction or demolition activities, the Andrews AFB cultural resources manager and the MHT shall be notified to ensure compliance with 36 CFR, Part 800.11.
- The ERP Office at Andrews AFB would investigate historical operations and actions prior to demolition activities to determine specific requirements for protection of human health and environmental exposure from hazardous materials.
- Prior to construction, the contractor would submit to MDE, after coordination with 316 CES, a Notice of Intent for coverage under the Maryland General Stormwater Permit for Construction Activities.
- The contractor would prepare a storm water management plan and sediment and erosion control plan in accordance with the Maryland Storm Water Management Guidelines for State and Federal Projects and 2004 Maryland Erosion and Sediment Control Guidelines for State and Federal projects.
- Andrews AFB would coordinate with MDE to obtain a pre-construction notice to obtain regulatory approval if necessary for the proposed action under the nationwide permit authority.
- Appropriate air quality permits would be obtained if necessary after determining requirements for stationary emission sources.

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8.0 REFERENCES

Andrews Air Force Base (AFB). 1995. Andrews AFB, 1995-1996, Comprint, Inc., Gaithersburg, Maryland.

Andrews Air Force Base (AFB). 1996a. Cultural Resources Management Plan. Prepared for the USAF Air Mobility Command. On file, Andrews Air Force Base, Maryland.

Andrews Air Force Base (AFB). 1996b. Hazardous Waste Management Support Plan at Andrews Air Force Base. Andrews Air Force Base, Maryland.

Andrews Air Force Base (AFB). 1998a. Hazardous Material Planning and Response Plan. Andrews Air Force Base, Maryland.

Andrews Air Force Base (AFB). 1998b. Spill Prevention, Control and Countermeasures Plan. Andrews Air Force Base, Maryland.

Andrews Air Force Base (AFB). 2001. Integrated Natural Resources Management Plan. Andrews AFB, Maryland.

Andrews Air Force Base (AFB). 2003a. General Plan. Andrews Air Force Base, Maryland.

Andrews Air Force Base (AFB). 2003b. Integrated Cultural Resources Management Plan. Prepared for the USAF Air Mobility Command. On file, Andrews Air Force Base, Maryland.

Andrews Air Force Base (AFB). 2004. Final Wetlands Delineation Report for Andrews Air Force Base. 89th Airlift Wing, Andrews AFB, MD.

Andrews Air Force Base (AFB). 2005a. Threatened and Endangered Species Survey. Prepared for Department of the Air Force, Andrews Air Force Base, and Air Force Center for Environmental Excellence. Andrews AFB, MD.

Andrews Air Force Base (AFB). 2005b. Air Sovereignty Alert Mission Beddown at the 113th Wing, District of Columbia Air National Guard, Andrews AFB. Prepared by Science Application International Corporation for 113th Wing District of Columbia Air National Guard, Andrews AFB, MD

Andrews Air Force Base (AFB). 2006a. Environmental Protection Standards for Contracts. 316th Wing, Department of the Air Force, Andrews AFB.

Andrews Air Force Base (AFB). 2006b. Comprehensive Transportation Study. Prepared for Andrews Air Force Base and Military Surface Deployment and Distribution Command Transportation Engineering Agency and Corps of Engineers, Norfolk Division. Prepared by Gannett Fleming.

Andrews Air Force Base (AFB). n.d. Office of History, Real Property Cards of the 1776th Air Base Wing 1989 for various buildings in the existing Munitions Storage Area. Andrews AFB, Maryland.

Boeing. n.d. "MB-1/AIR-2 Genie Missile." http://www.boeing.com/history/mdc/genie.html [accessed February 27, 2007].

Council on Environmental Quality (CEQ). 1997. Guidance under the National Environmental Policy Act. Washington, D.C..

Craven, W.F. and J.L. Cate (eds). 1955. The Army Air Forces in World War II. Vol.6: Men and Planes. The University of Chicago Press: Chicago.

Cullinane, J. 1994. Inventory and Evaluation of Historic Resources, Andrews AFB, Maryland. John Cullinane Associates, Washington, D.C.

Custer, J. F. 1989. Prehistoric Cultures of the Delmarva Peninsula: An Archeological Study. University of Delaware Press, Newark.

El Dorado County. 2002. El Dorado County Air Pollution Control District, El Dorado County: Guide to Air Quality Assessment: Determining Significance of Air Quality Impacts - Construction Activities, El Dorado County, California.

Environmental protection Agency (EPA) 2006. EPA Green Book – Currently Designated Nonattainment Areas for All Criteria Pollutants. http://www.epa.gov/oar/oaqps/greenbk/ancl.html . Accessed January 2, 2007.

Federal Aviation Administration. nd. Federal Aviation Regulations Part 77 Objects Affecting Navigable Airspace. U.S. Department of Transportation.

Gardner, W. M. 1974. The Flint Run Complex: Pattern and Process During the Paleoindian to Early Archaic, No. 1 pp. 5–47. Occasional Publications. Archaeology Laboratory, Catholic University of America, Washington D.C.

Harrell, Julia M. and Ernie S. Montagliani. 1984. Historical Archeological Survey Andrews Air Force Base. On file, Andrews AFB, Maryland.

Harris, J. 1998. Handbook of Acoustical Measurements and Noise Control. 3rd Edition. Acoustical Society of America, Woodbury, New York.

Kirby, R.M., E.D. Matthews, M.A. Bailey. 1967. Soil Survey of Prince George's County, Maryland. United States Department of Agriculture, Soil Conservation Service.

Markell, A., C. Heidenrich, P. Godwin. 2008. Phase I Archeological Survey of a 30-Acre Parcel at the DC ANG Facility, Andrews Air Force Base, Maryland (Draft Report). R. Christopher Goodwin and Associates, Inc. Frederick Maryland.

Maryland Department of Business and Economic Development. 2005. 2005 BRAC State of Maryland Impact Analysis: 2006-2020. A Report to the U.S. Department of Labor. Office of Military and Federal Affairs, Baltimore, MD.

Maryland Department of Environment. 2007. Wetlands of Maryland. http://www.mde.state.md.us/Programs/WaterPrograms/Wetlands_Waterways/documents_information/mdwetlands.asp. Accessed 20 February 2007.

Maryland Department of Natural Resources. 2003. The Importance of Maryland's Forest: Yesterday, Today, and Tomorrow. Maryland Department of Natural Resources, Annapolis, MD. www.dnr.state.md.us/forests/download/forests_ytt.pdf. Accessed 20 February 2007.

Maryland Department of the Environment (MDE). 20004. Maryland Erosion and Sediment Control Guidelines for State and Federal Projects. Maryland Department of the Environment. Baltimore, MD.

Maryland Department of the Environment (MDE). 2001. Maryland Storm Water Management Guidelines for State and Federal Projects. Water Management Administration. Baltimore, MD.

Maryland Historical Trust (MHT). 1986. The Maryland Comprehensive Historic Preservation Plan: Planning the Future of Maryland's Past. Department of Economic and Community Development, Annapolis, Maryland.

Moeller, K. L., D. A. Walitschek, M. Greby, and J. F. Hoffecker. 1995. An Archaeological and Historic Resources Inventory of Andrews Air Force Base, Maryland. On file, U.S. Air Force/Air Mobility Command, Scott Air Force Base, Illinois.

National Park Service (NPS). 1993. Cultural Resource Report and Management Plan Recommendations for Andrews AFB, Prince George's County, Maryland, Cultural Resource Planning Branch, National Register Programs Division, Mid-Atlantic Region, NPS.

Parsch, A. 2007. "Douglas MB-1/AIR-2 Genie." http://www.designation-systems.net/dusrm/r-2.html [accessed February 27, 2007].

Prince George's County. 2007. Flood Management. http://www.co.pg.md.us/Government/AgencyIndex/DER/Ppd/pgmaps3.htm. Accessed 20 February 2007.

Snyder, K. and W. Gardner. 1979. A Preliminary Archaeological Reconnaissance of Proposed Sewer Lines in the Rock Run Area, Montgomery County, Maryland. On file, Maryland Historic Trust, Crownsville.

Tetra Tech. 1999. Phase II Archaeological Investigations, Andrews AFB, Maryland. Tetra Tech, Inc.

U.S. Air Force (USAF). 2007. 2006 Emissions Certification Report for Andrews AFB. 316th CES/CEV. March 2007.

U.S. Air Force (USAF). 1993. Air Force Policy Directive 91-3, Occupational Safety and Health.

U.S. Air Force (USAF). 2001. Air Force Manual 91-201, Explosive Safety Standards.

U.S. Army. 1978. Construction Site Noise Control. Construction Engineering Research Laboratories. Champagne, IL.

U.S. Geological Survey (USGS). 1997. Regional aquifers in Maryland Coastal Plain. Groundwater Atlas of the United States. http://capp.water.usgs.gov/gwa/ch_l/index.html Accessed 20 February 2007.

USCB 1990. 1990 Summary Tape File (STF 1) 100 Percent Data. DP-1 General Population and Housing Characteristics. Geographic Area: Andrews AFB CDP, Maryland.

USCB 2000a. 2000 Summary Tape File (STF 1) 100 Percent Data. DP-1 Profile of General Demographic Characteristics. Geographic Area: Andrews AFB CDP, Maryland.

USCB 2000b. 2000 Summary File 4 (SF 4) Sample Data. DP-3 Profile of Selected Economic Characteristics. Geographic Areas: Nation, Maryland, Prince George's County, and Andrews AFB CDP.

USCB 2000c. 2000 Summary File 4 (SF 4) Sample Data. QT-P34. Poverty Status in 1999 of Individuals. Geographic Areas: Nation, Maryland, Prince George's County, and Andrews AFB CDP.

USCB 2001a. Census 2000 PHC-T-2. Ranking Tables for States: 1990 and 2000. http://www.census.gov/population/cen2000/phc-t2/tab03.pdf

USCB 2001b. Census 2000 PHC-T-4. Ranking Tables for Counties: 1990 and 2000. http://www.census.gov/population/cen2000/phc-t4/tab04.pdf

Virta, Alan. 1984. Prince George's County, A Pictorial History. The Donning Company, Publishers, Virginia Beach, Virginia. Reprinted 1991.

Ware, Donna M. 1990. The Historic Properties of Anne Arundel County. Anne Arundel County, Annapolis, Maryland.

Weitze, K. J. 1996. Andrews AFB, Camp Springs, Maryland – Inventory of Cold War Properties. Geo-Marine, Inc., Plano, TX.

9.0 LIST OF PREPARERS

This EA was prepared by Geo-Marine, Inc., 2713 Magruder Blvd., Suite D, Hampton, VA 23666. The following personnel developed the document.

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10.0 PERSONS AND AGENCIES CONTACTED

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In addition to the personnel coordination listed above, this Draft EA has been submitted to Ms. Linda C. Janey, J.D. Director, Maryland Department of Planning, State Clearinghouse for Intergovernmental Assistance. On behalf of Andrews AFB, eight copies were submitted in accordance with Executive Order 12372, Intergovernmental Review of Federal Programs to request assistance by reviewing the Draft EA and providing comments. Assistance was also requested in advising appropriate agencies of this action and soliciting their comments regarding potential environmental impacts.

The notice of availability for this EA was published for three consecutive days in the *Washington Examiner* Newspaper to solicit comments in 30-day public comment period. The Draft EA was placed in the Hillcrest Heights Public Library in Prince George's County, Maryland for the 30-day public comment period.

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APPENDIX A
Photographs Depicting the Eight Buildings Comprising the Existing MSA

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Photograph depicting Buildings 4942 (storage igloo), view facing South

Photograph depicting Buildings 4942 (storage igloo), view facing East

Photograph depicting Building 4952 (storage igloo), view facing North

Photograph depicting Building 4952 (storage igloo), view facing West

Photograph depicting Building 4962 (storage igloo), view facing East

Photograph depicting Building 4962 (storage igloo), view facing North

Photograph depicting Building 4963 (storage igloo), view facing West

Photograph depicting Building 4963 (storage igloo), view facing North

Photograph depicting Building 4964 (hazardous storage facility), view facing East

Photograph depicting Building 4971 (hazardous storage facility), view facing West

Photograph depicting Building 4972 (checkout and assembly), view facing North

Photograph depicting Building 4982 (security guardhouse), view facing North

APPENDIX B
Regulatory Coordination

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NOTICE OF AVAILABILITY

FINDING OF NO SIGNIFICANT IMPACT FOR ENVIRONMENTAL ASSESSMENT
RELOCATION OF JOINT MUNITIONS STORAGE AREA
AT ANDREWS AIR FORCE BASE, MARYLAND

Pursuant to the Council on Environmental Quality regulations implementing procedural provisions of the National Environmental Policy Act, the Department of the Air Force gives notice that an Environmental Assessment (EA) has been prepared and an Environmental Impact Statement is not required for relocation of the joint munitions storage area at Andrews Air Force Base, Maryland. For review of the EA, interested parties may contact Mr. Duane N. Peterson, Environmental Protection Specialist, D.C. Air National Guard, 3213 Annapolis Rd., Andrews AFB, MD 20762, (240) 857-6901, or the Maryland Department of Planning, State Clearinghouse for Intergovernmental Assistance, Linda C. Janey, Suite 1104, 301 W. Preston Street, Baltimore, Maryland 21201. Additionally, a copy of the Draft EA is available for public review at Hillcrest Heights Public Library, 2398 Iverson Street, Temple Hills, MD 20748, (301) 630-4900. Written comments should be submitted within 30 days of this notice.

31 May 2007

Maryland Department of Planning
State Clearinghouse for Intergovernmental Assistance
Attention: Linda C. Janey, J.D. Assistant Secretary for Clearinghouse and Communications
Suite 1104
301 W. Preston Street
Baltimore, Maryland 21201-2305

RE: Draft Environmental Assessment (EA) for Relocation of the Joint Munitions Storage Area at Andrews Air Force Base, Maryland

Dear Ms. Janey:

On behalf of Andrews Air Force Base (AFB), Geo-Marine, Inc. is submitting nine bound copies of the referenced document. In accordance with Executive Order 12372, Intergovernmental Review of Federal Programs, we request your assistance by reviewing the Draft EA and providing comments. We also request your assistance in advising appropriate agencies of this action and soliciting their comments regarding potential environmental impacts.

Please review this information and respond with comments within 30 days of receiving this letter. Responses and written comments should be directed to: Mr. Duane N. Peterson, Environmental Protection Specialist, D.C. Air National Guard, 3213 Annapolis Rd., Andrews AFB, MD 20762, (240) 857-6901. Thank you for your assistance.

Sincerely,

Joseph J. Campo, Ph.D.
Senior Environmental Project Manager

cc: Duane N. Peterson, Andrews AFB

Enclosures: nine copies of the Draft EA

April 13, 2007

Elizabeth Cole
Administrator, Review and Compliance
Office of Preservation Services
Maryland Historical Trust
110 Community Place
Crownsville, Maryland 21032-2023
410-514-7600

RE: Draft Environmental Assessment for Relocation of the Joint Munitions Storage Area at Andrews Air Force Base, Maryland.

Dear Ms. Cole,

Geo-Marine, Inc., is pleased to submit the results of our draft Environmental Assessment (EA) to the Maryland Historical Trust on behalf of Andrews Air Force Base (AFB), Maryland, for review and comment.

The enclosed draft EA represents consideration of a planned relocation of the Joint Munitions Storage Area at Andrews AFB, to a new location on newly acquired base property. The purpose for this construction includes meeting the base's mission needs for ready access to munitions in a manner that also meets the Air Force's Explosive Safety Standards, Standard Facility Requirements, and other guidelines for safety. There are two aspects to our assessment of the planned relocation, including 1) treatment for the space that is newly acquired and 2) treatment of the existing buildings of the Joint Munitions Storage Area. Our recommendations are summarized in Sections 3.10 and 4.10 of the document.

As always, Geo-Marine, Inc., is pleased to have the opportunity to be of service to Andrews AFB and to consult on their behalf with the Maryland Historical Trust. If you have any questions concerning this EA, or if we may be of additional service, please feel free to contact me at 757-873-3702. We are at your service.

With best regards, I remain

Yours faithfully,

Brandi M. Carrier Jones, M.A., RPA
Principal Investigator

MHT 4109874071 P.1

April 30, 2007

Brandi M. Carrier Jones
Principal Investigator
Geo-Marine, Inc.
2713 Magruder Blvd., Suite D
Hampton Roads, Virginia 23666-1572

Re: Relocation of the Joint Munitions Storage Area at Andrews AFB
Prince George's County, Maryland

Dear Ms. Jones:

Thank you for your recent letter, dated 13 April 2007 and received by the Maryland Historical Trust (Trust) on 18 April 2007, requesting our review and comment on the draft EA prepared for the above-referenced project.

The Trust, a division of the Maryland Department of Planning, is reviewing the project to assess its effects on historic properties, pursuant to Section 106 of the National Historic Preservation Act of 1966. According to the draft EA, the preferred alternative for the undertaking entails relocation of the Munitions Storage Area (MSA) to a new location on recently acquired land on the south side of Andrews AFB, and demolition of the exiting MSA facilities that were constructed in the 1950s. The undertaking will also include the construction of associated new roads, utilities, communications systems, intrusion detection systems, security fencing and lighting. We offer the following comments.

Historic Built Environment: The proposed undertaking includes the demolition of eight buildings within the current MSA. Buildings 4942, 4952, 4962, 4963, 4972 and 4982 were constructed between 1958-1959 and Buildings 4964 and 4971 were built between 1961-1962. Based on the documentation presented in the EA, the Trust concurs that all eight buildings are not historic and do not meet the criteria for eligibility in the National Register of Historic Places. Further consideration of these buildings is not warranted.

Archeology: The draft EA states that Andrews AFB will conduct a Phase I cultural resources survey in order to identify whether or not the project has the potential to impact archeological sites that have not yet been identified. The survey should be performed by a qualified professional archeologist, and conducted in accordance with the *Standards and Guidelines for Archeological Investigations in Maryland* (Shaffer and Cole 1994). A copy of the draft survey report should be submitted to the Trust for review. Based upon the survey results, we will be able to determine whether or not the project will affect significant archeological resources and make appropriate recommendations regarding measures to avoid, reduce, or mitigate any effects. We await the results of this critical step in the Section 106 process.

Section 106 Review: We look forward to further coordination with Andrews AFB and any other relevant parties to successfully complete the Section 106 consultation for this undertaking.

MHT 4109874071 p.2

Brandi Carrier Jones
Relocation of the Joint Munitions Storage Area
Andres Air Force Base
April 30, 2007
Page 2

If you have questions or need further assistance, please contact Jonathan Sager (for historic built environment) at 410-514-7636 / jsager@mdp.state.md.us or me (for archeology) at 410-514-7631 / bcole@mdp.state.md.us. Thank you for providing us this opportunity to comment.

Sincerely,

Elizabeth J. Cole
Administrator, Project Review & Compliance

EJC/JES/200701306
cc: John Franz (Andrews AFB)

31 May 2007

Hillcrest Heights Public Library
2398 Iverson Street
Temple Hills, MD 20748
(301) 630-4900

RE: Draft Environmental Assessment (EA) for Relocation of the Joint Munitions Storage Area at Andrews Air Force Base, Maryland

To whom this may concern:

On behalf of Andrews Air Force Base (AFB), Geo-Marine, Inc. is submitting one copy of the referenced document. In accordance with the National Environmental Policy Act, we request your assistance in making this EA available to the public for review and comment within 30 days of the publication of the notice of availability (NOA). The NOA for this document has been published in the *Washington Examiner* for three consecutive days starting on June 6, 2007. Responses and written comments should be directed to: Mr. Duane N. Peterson, Environmental Protection Specialist, D.C. Air National Guard, 3213 Annapolis Rd., Andrews AFB, MD 20762, (240) 857-6901. Thank you for your assistance.

Sincerely,

Joseph J. Campo, Ph.D.
Senior Environmental Project Manager

cc: Duane N. Peterson, Andrews AFB

Enclosures: one copy of the Draft EA