

ENVIRONMENTAL ASSESSMENT OF THE PRIVATIZATION OF MILITARY FAMILY HOUSING AT ANDREWS AIR FORCE BASE, MARYLAND



HEADQUARTERS AIR MOBILITY COMMAND



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ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit	EA	Environmental Assessment
µg/m ³	micrograms per cubic meter	EIAP	Environmental Impact Analysis Process
89 AW	89th Airlift Wing	EIFS	Economic Impact Forecast System
89 CES/CEV	89th Civil Engineering Squadron/Environmental Flight	EIS	Environmental Impact Statement
316 WG	316th Wing	EO	Executive Order
ACHP	Advisory Council on Historic Preservation	ERP	Environmental Restoration Program
ACM	asbestos-containing material	ESA	Endangered Species Act
AFB	Air Force Base	FEMA	Federal Emergency Management Agency
AFDW	Air Force District of Washington	FONSI	Finding of No Significant Impact
AFI	Air Force Instruction	FY	Fiscal Year
AFPD	Air Force Policy Directive	HMP	hazardous materials pharmacy
AICUZ	Air Installation Compatible Use Zone	HRMA	Housing Requirements and Marketing Analysis
AMC	Air Mobility Command	HVAC	heating, ventilation, and air conditioning
AMSL	above mean sea level	HWMP	Hazardous Waste Management Plan
AOC	Area of Concern	IAP	initial accumulation point
APE	Area of Potential Effect	ICRMP	Integrated Cultural Resources Management Plan
AQCR	Air Quality Control Region	IDEA	Installation Development Environmental Assessment
ARPA	Archeological Resources Protection Act	IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
AST	aboveground storage tank	INRMP	Integrated Natural Resources Management Plan
BAH	Basic Allowance for Housing	LAN	Local Area Network
BMP	best management practice	LBP	lead-based paint
C&D	Construction and Demolition	MDE	Maryland Department of the Environment
CAA	Clean Air Act	MFH	Military Family Housing
CEQ	Council on Environmental Quality	mg/m ³	milligrams per cubic meter
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	MHPI	Military Housing Privatization Initiative
CFR	Code of Federal Regulations		
CO	carbon monoxide		
COMAR	Code of Maryland Regulations		
CWA	Clean Water Act		
dB	decibel		
dba	A-weighted decibel		
DOD	Department of Defense		

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MOGAS	motor gas	PSD	Prevention of Significant Deterioration
NAGPRA	Native American Graves Protection and Repatriation Act	PVC	polyvinyl chloride
NCRS	National Resources Conservation Service	RCRA	Resource Conservation and Recovery Act
NEPA	National Environmental Policy Act	ROI	Region of Influence
NHPA	National Historic Preservation Act	RRRP	Resources, Recovery, and Recycling Program
NO ₂	nitrogen dioxide	SARA	Superfund Amendments and Reauthorization Act
NOAA	National Oceanic and Atmospheric Administration	SHPO	State Historic Preservation Office
NO _x	nitrogen oxide	SIP	State Implementation Plan
NPDES	National Pollutant Discharge Elimination System	SO ₂	sulfur dioxide
NPS	National Park Service	SWMU	Solid Waste Management Unit
NRHP	National Register of Historic Places	SWPPP	storm water pollution prevention plan
O ₃	ozone	TCP	traditional cultural properties
P.L.	Public Law	tpy	tons per year
Pb	lead	U.S.C.	United States Code
PCB	polychlorinated biphenyl	USACE	U.S. Army Corps of Engineers
pCi/L	picocuries per liter	USAF	U.S. Air Force
PM _{2.5/10}	particulate matter less than or equal to 2.5/10 microns	USEPA	U.S. Environmental Protection Agency
PO	Project Owner	USFWS	U.S. Fish and Wildlife Service
POL	petroleum, oil, and lubricants	UST	underground storage tank
ppm	parts per million	VOC	volatile organic compound
		WSSC	Washington Suburban Sanitary Commission

FINDING OF NO SIGNIFICANT IMPACT
ENVIRONMENTAL ASSESSMENT
OF THE PRIVATIZATION OF MILITARY FAMILY HOUSING
AT ANDREWS AIR FORCE BASE, MARYLAND

INTRODUCTION

The U.S. Air Force (USAF or Air Force) operates and maintains approximately 104,000 family housing units at its installations throughout the United States. More than 38 percent of all units do not meet current modern standards and require major improvement or replacement. The lack of adequate military family housing (MFH) forces many military members and their families to live in housing in need of repair, renovation, or replacement, or to live off-base where the cost and quality of housing vary considerably. Congress enacted the Military Housing Privatization Initiative as part of the National Defense Authorization Act for Fiscal Year 1996 to create alternative authorities for improvement and construction of MFH.

Consistent with the USAF Housing Privatization Program, the Air Force proposes to convey its MFH units, grant leases of land, and transfer responsibility for providing housing and ancillary supporting facilities to a private developer at Andrews Air Force Base (AFB). An Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) and the *Environmental Impact Analysis Process* (32 Code of Federal Regulations [CFR] Part 989). The EA is incorporated by reference into this Finding of No Significant Impact (FONSI).

PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is to transfer responsibility in a private developer for MFH at Andrews AFB. The need for the Proposed Action is to provide affordable, quality housing and ancillary facilities to military members and their families through replacement and renovation of existing family housing units so that they meet current USAF standards.

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Proposed Action. The Air Force proposes to convey 1,480 MFH units, grant leases of approximately 406.5 acres of land covering 21 parcels (A through S, farmhouses, and Belle Chance), and transfer responsibility for providing housing and ancillary supporting facilities at Andrews AFB to a private developer (the Project Owner [PO]). The Air Force would convey all 1,480 existing MFH units at Andrews AFB to the PO. The PO would retain 490 newly built or recently renovated units, renovate 139 units, construct 258 units, and demolish 851 units, resulting in an end-state inventory of 887 MFH units. The Air Force would also grant 50-year leases for approximately 406.5 acres of lands underlying all of the MFH neighborhoods at Andrews AFB, including some utilities (electrical system and telephone system) and improvements such as tot lots, playgrounds, the soccer field, the baseball diamond, bus stops, sidewalks, and storm drainage. Leases for six of the parcels (Parcels N, O, P, Q, R, and S), amounting to approximately 114 acres, would terminate upon completion of demolition of MFH units on those parcels.

One of the MFH units is on the Belle Chance parcel, which includes three structures (Building 1966, the main residence; Building 1967, a storage shed; and Building 1968, a two-car garage) that are eligible for listing on the National Register of Historic Places (NRHP). Under the Proposed Action, Belle Chance would be conveyed to the PO for use as housing. The Air Force will satisfy its responsibilities under Section 106 of the National Historic Preservation Act regarding Belle Chance through the NEPA process applied to produce this EA and FONSI, as provided for in 36 CFR 800.8(c). A letter agreement between

the Air Force and the Maryland Historical Trust (Trust) will acknowledge the Air Force finding of no adverse effect on Belle Chance due to the transfer of the buildings being subject to a Preservation Covenant that satisfies 36 CFR 800.5 by providing adequate and legally enforceable restrictions to ensure the long-term preservation of the property's historic significance.

No Action Alternative. Under the No Action Alternative, the Air Force would not implement the Proposed Action but would continue to provide for the MFH needs of its personnel at Andrews AFB through use of traditional military maintenance and construction procedures. Andrews AFB would continue to obtain funding for MFH through the Congressional authorization and appropriations process. Based on historical trends, it is assumed that the amount of Congressional funding for MFH would not change and that the housing maintenance backlog would continue to increase. Any major changes to existing housing or construction of new housing would require that appropriate NEPA analyses be completed before implementing such actions.

SUMMARY OF ANTICIPATED ENVIRONMENTAL IMPACTS

Proposed Action. Short-term direct minor adverse effects resulting from construction and demolition activities would occur on the noise environment, air quality, safety, geological resources, water resources, biological resources, infrastructure (transportation and production of solid waste), and hazardous materials and wastes. Adverse effects associated with construction activities would be localized to the immediate area of construction and would subside following the end of construction in that area. Short-term indirect minor beneficial effects on socioeconomics would also occur on the local community from construction costs; however, expenditures associated with construction are only short-term and would have no long-lasting community benefits.

Long-term direct minor beneficial effects on land use, safety, and infrastructure (utilities) would be expected from reduction of housing density. Future land use for tracts adjacent to MFH would be compatible with community land use.

Short-term minor adverse and long-term minor beneficial effects would be expected as a result of removal of asbestos-containing material, lead-based paint, and mold in older MFH units. All removal and abatement procedures would be in accordance with Federal, state, and local regulations. Short-term adverse effects as a result of exposure to diesel fumes could occur during construction activities around Environmental Restoration Program Site ST-19. Many of the MFH parcels occur on Site ST-19. The Proposed Action would not interfere with future sampling or clean-up activities. Site ST-18 also occurs in the MFH area; no further response action is planned for Site ST-18. Further sampling and investigation of Solid Waste Management Units 69 (in Parcel G) and 75 (in Parcel F) are anticipated in the future.

The Belle Chance residence is within the 70-decibel (dB) noise contour based on the current Air Installation Compatible Use Zone (AICUZ) study for Andrews AFB. Air Force guidance requires sound attenuation be used in residential use of land within the 70- to 74-dB noise contours.

The historic archeological site associated with Belle Chance is also eligible for NRHP-listing. No disturbance of the site or any other cultural resources will be allowed under the proposed transfer. No other effects on archeological resources, architectural resources, or traditional cultural properties would be expected as a result of the Proposed Action. In the event of an inadvertent discovery, the Trust and other concerned groups would be consulted to ensure proper treatment of the find.

No effects on wetlands or floodplains would be expected. Wetlands and floodplains border the MFH parcels, but no construction activities or other alteration of these features would occur under the Proposed Action.


No Action Alternative. The No Action Alternative would result in continuation of the existing condition. No additional effects as a result of the No Action Alternative would be expected. Long-term effects on land use planning could result if the proposed demolition of Parcels N through S did not occur as proposed under the MHPI. Under the No Action Alternative, NEPA analysis would be required for the demolition of any MFH, which could slow any redevelopment plans on Andrews AFB.

PUBLIC REVIEW AND INTERAGENCY COORDINATION

The Air Force initiated Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) for this proposed action on July 10, 2006, in accordance with Air Force policy. A 30-day public and agency review of the draft EA and finding occurred in accordance NEPA and Air Force regulations. A Notice of Availability for this action was published in the *Prince George's Gazette* on March 22, 2007; the Draft EA and Draft FONSI were made available in the Upper Marlboro Branch of the Prince George's County Public Library System, and copies of the Draft EA and Draft FONSI were distributed to the IICEP list. Comments received through IICEP and the review process were considered and included in appendices to the EA.

FINDING OF NO SIGNIFICANT IMPACT

I conclude that the environmental effects of the proposed privatization of MFH at Andrews AFB are not significant, that preparation of an Environmental Impact Statement is unnecessary, and that a FONSI is appropriate. The preparation of the EA is in accordance with NEPA, Council on Environmental Quality regulations, and 32 CFR Part 989, as amended.



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

26 JUN 2007

Date

COVER SHEET

ENVIRONMENTAL ASSESSMENT OF THE PRIVATIZATION OF MILITARY FAMILY HOUSING AT ANDREWS AIR FORCE BASE, MARYLAND

Responsible Agencies: U.S. Air Force (USAF or Air Force), Headquarters Air Mobility Command, Scott Air Force Base (AFB), Illinois; and Andrews AFB, Maryland

Affected Location: Andrews AFB, Maryland

Proposed Action: Privatization of Military Family Housing (MFH) at Andrews AFB

Report Designation: Environmental Assessment (EA)

Abstract: Pursuant to the USAF Housing Privatization Program, the USAF proposes to convey its MFH units, grant leases of land, and transfer responsibility for providing housing to a private developer at Andrews AFB. Andrews AFB has 1,480 MFH units. Under the Proposed Action, all 1,480 MFH units would be conveyed to a private developer and approximately 406.5 acres would be leased to the private developer. The private developer would retain 490 newly built or recently renovated units, renovate an additional 139 units, build 258 new units, and demolish 851 units, resulting in an end-state inventory of 887 MFH units.

This EA has been prepared to evaluate the Proposed Action and alternatives, including the No Action Alternative, and to aid in determining whether an Environmental Impact Statement is needed. Resource categories that are considered in the impact analysis are noise, land use, air quality, safety, geological resources, water resources, biological resources, cultural resources, socioeconomics and environmental justice, infrastructure, and hazardous materials and wastes. The EA was made available to the public for a 30-day public review period.

Written comments and inquiries regarding this document should be directed to Mr. Joseph Brown, Chief, Environmental Planning Branch, 316 CES/CEVP, 1419 Menoher Drive, Andrews AFB, MD e20724.

**ENVIRONMENTAL ASSESSMENT
OF THE PRIVATIZATION
OF MILITARY FAMILY HOUSING
AT ANDREWS AIR FORCE BASE, MARYLAND**

**HEADQUARTERS AIR MOBILITY COMMAND
COMMUNITY PLANNING BRANCH
507 SYMINGTON DRIVE
SCOTT AIR FORCE BASE, ILLINOIS 62225-5022**

MAY 2007

**ENVIRONMENTAL ASSESSMENT
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1. Purpose, Need, and Scope

1.1 Background

The U.S. Air Force (USAF or Air Force) operates and maintains approximately 104,000 military family housing (MFH) units at its installations throughout the United States. More than 38 percent of all units do not meet current modern standards and require either major improvement or replacement. At most installations the demand for adequate on-installation housing exceeds supply. The lack of adequate MFH forces many military members and their families to live in on-installation housing in need of repair, renovation, or replacement; or to live off-installation where the cost and quality of housing can vary considerably. Often, the cost to military members and their families to live off-installation is 15 to 20 percent greater than the cost to live on-installation. The USAF estimates that as much as \$7 billion would be needed to bring its housing up to current standards and to address the deficit of housing with an additional 5,000 new housing units (AFCEE 2004).

In recognition of these problems, Congress enacted Section 2801 of the National Defense Authorization Act for Fiscal Year (FY) 1996 (Public Law [P.L.] 104-106, codified at Title 10 of the United States Code [U.S.C.] Sections 2871–2885). Also known as the Military Housing Privatization Initiative (MHPI), this provision of law creates alternative authorities for improvement and construction of MFH (see **Appendix A**). The legislative intent of Congress in enacting these additional authorities was to enable the military to obtain private sector funding to satisfy MFH requirements. By leveraging scarce public funding, the USAF can obtain private sector funds for construction, maintenance, management, renovation, replacement, rehabilitation, and development of USAF MFH and ancillary supporting facilities. The Department of Defense (DOD) has asked the USAF to upgrade all required, inadequate housing before FY 2010.

1.2 Purpose of and Need for the Proposed Action

Pursuant to the USAF Housing Privatization Program, the USAF proposes to convey its MFH units, grant leases of land, and transfer responsibility for providing housing and ancillary supporting facilities at Andrews Air Force Base (AFB) to a private developer.

The purpose of the Proposed Action is to transfer responsibility in a private developer for MFH at Andrews AFB. The need for the Proposed Action is to provide affordable, quality housing and ancillary facilities to military members and their families through replacement and renovation of existing family housing units so that they meet current USAF standards.

Substantial portions of the MFH inventory at Andrews AFB exhibit a principal concern facing MFH throughout the USAF: many MFH units are in poor condition. At Andrews AFB, there are 1,480 MFH units, many of which show signs of age and continuous use to such extent that they warrant demolition. Many units are not energy-efficient, and housing density is too high in some neighborhoods. Housing interiors are inadequate by modern criteria in that bedroom closets, kitchen storage, and kitchen counter space are insufficient; and plumbing, electrical systems, and heating, ventilation, and air conditioning (HVAC) are inefficient.

1.3 Selection Criteria

The following goals are used as selection criteria in keeping with the objectives of the MHPI:

- a. Complies with the intent of MHPI congressional legislation.
- b. Ensures that eligible military members and their families have access to quality, attractive, and affordable housing by upgrading inadequate existing MFH and by building new MFH to address housing conditions at Andrews AFB.
- c. Improves the appearance and functions of the residential community, while meeting environmental stewardship responsibilities.
- d. Provides ancillary supporting facilities that enhance Andrews AFB's residential community.
- e. Maintains positive relations with the communities that surround Andrews AFB.
- f. Provides for the effective management and operation of existing, renovated, and new MFH units and ancillary supporting facilities on a long-term basis.
- g. Provides the highest economic benefit, cost savings, and efficiency.
- h. Complies with the USAF paradigm that the number of required MFH units represents the number of key and essential service personnel who need to be housed on-installation, considering the number of historic units, 10 percent of all grades, and the service member whose total income is less than 50 percent of the average median income of the community.

1.4 Location and Mission

Andrews AFB encompasses 6,828 acres in Prince George's County, Maryland, 5 miles southeast of Washington, D.C. (**Figure 1-1**). The communities of Camp Springs and Morningside surround the installation. Interstate 495 (the Capital Beltway) is immediately northwest of the installation. The 316th Wing (316 WG) was formally activated as the host unit at Andrews AFB on June 22, 2006, under the command of the Air Force District of Washington (AFDW) at Bolling AFB, Washington, D.C. The 89th Airlift Wing (89 AW) is a tenant of Andrews AFB and reports to Headquarters Air Mobility Command (AMC) at Scott AFB, Illinois. Other tenants at Andrews AFB include the 79th Medical Wing, Air Force Reserve Command (459th Airlift Wing), Air National Guard Readiness Center, D.C. Air National Guard (113th Wing), Civil Air Patrol, Maryland State Police, and Naval Air Facility Washington. Additional tenants might be added as a result of the Base Realignment and Closure Act of 2005.

1.5 Summary of Key Environmental Compliance Requirements

1.5.1 National Environmental Policy Act

The National Environmental Policy Act of 1969, NEPA, is a Federal statute requiring the identification and analysis of potential environmental impacts of proposed Federal actions before those actions are taken. NEPA established the Council on Environmental Quality (CEQ) that is charged with the development of implementing regulations and ensuring agency compliance with NEPA. CEQ regulations mandate that all Federal agencies use a systematic interdisciplinary approach to environmental planning and the evaluation of actions that might affect the environment.

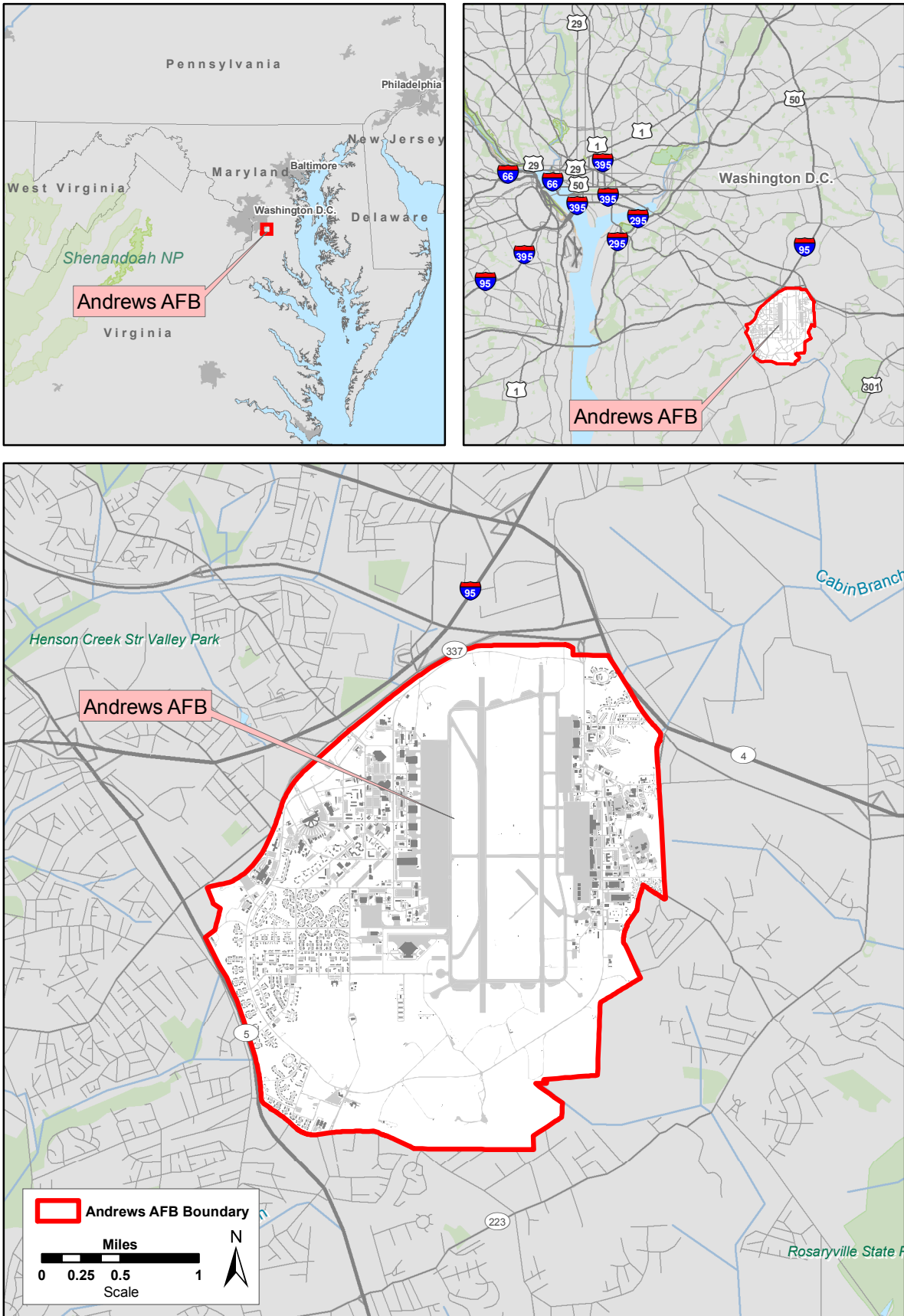


Figure 1-1. Andrews AFB Location Map

This process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. The intent of NEPA is to protect, restore, or enhance the environment through well-informed Federal decisions.

The process for implementing NEPA is codified in Title 40 Code of Federal Regulations (CFR) 1500–1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*. The CEQ was established under NEPA to implement and oversee Federal policy in this process. To this end, the CEQ regulations specify that an Environmental Assessment (EA) be prepared to briefly provide evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI), aid in an agency’s compliance with NEPA when an EIS is unnecessary, and facilitate preparation of an EIS when one is necessary.

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

1.5.2 Integration of Other Environmental Statutes and Regulations

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

The EA examines potential effects of the Proposed Action and alternatives on 11 resource areas: noise, land use, air quality, safety, geological resources, water resources, biological resources, cultural resources, socioeconomics and environmental justice, infrastructure, and hazardous materials and wastes. These resources were identified as being potentially affected by the Proposed Action and include applicable elements of the human environment that are prompted for review by Executive Order (EO), regulation, or policy. **Appendix B** contains examples of relevant laws, regulations, and other requirements that are often considered as part of the analysis. Where useful to better understanding, key provisions of the statutes and EOs described in **Appendix B** are discussed in more detail in the text of the EA.

1.5.3 Interagency Coordination and Public Involvement

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

The USAF initiated the IICEP process on July 10, 2006, by notifying relevant Federal, state, and local agencies of the Proposed Action. Agencies were provided a 30-day review period to make known their

environmental concerns specific to the action. The IICEP process provided the USAF with the opportunity to cooperate with and consider state and local views in implementing the Proposed Action. **Appendix C** includes all IICEP materials, including one IICEP response letter from the Maryland-National Capital Park and Planning Commission that indicated the Proposed Action would not be inconsistent with the area's goals, objectives, policies, and strategies.

A Notice of Availability for the Draft EA and Draft FONSI was published on March 22, 2007, announcing a 30-day public review period. The Draft EA and Draft FONSI were also sent to the IICEP distribution list in Appendix C. One comment was received from the Maryland-National Capital Park and Planning Commission stating no further comments. **Appendix C** includes a copy of the Notice of Availability, the IICEP letter, and the comment that was received.

1.6 Organization of this Document

The EA is organized into seven sections. **Section 1** provides the purpose of and need for the Proposed Action. **Section 2** contains a description of the Proposed Action and Alternatives. **Section 3** contains a general description of the biophysical resources and baseline conditions that could potentially be affected by the Proposed Action or Alternatives. **Section 4** presents an analysis of the potential environmental consequences of implementing the Proposed Action or Alternatives. **Section 5** includes an analysis of the potential cumulative impacts at Andrews AFB. **Section 6** lists the preparers of the document. **Section 7** lists the references used in the preparation of the document.

Appendix A contains the text of the MHPI as codified in 10 U.S.C. 2871–2885. **Appendix B** contains applicable laws, regulations, policies, and planning criteria potentially relevant to NEPA analysis. **Appendix C** includes all IICEP and public review materials. **Appendix D** includes the coordination letters between the USAF and the Maryland Historical Trust regarding Belle Chance. **Appendix E** contains the desired features for Andrews AFB privatized housing units. **Appendix F** details the air emissions calculations associated with the Proposed Action.

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2. Description of the Proposed Action and Alternatives

This section presents information on the USAF's Housing Privatization Program and the Proposed Action under that initiative. **Section 2.1** describes how the Proposed Action would be implemented at Andrews AFB and **Section 2.2** identifies alternatives to the Proposed Action, including the No Action Alternative. Implementation of the Proposed Action as described in **Section 2.1** is Andrews AFB's preferred alternative for privatization of MFH.

2.1 Proposed Action

Consistent with the USAF Housing Privatization Program, the USAF proposes to convey 1,480 MFH units, grant leases for approximately 406.5 acres of land, and transfer responsibility for providing housing and ancillary supporting facilities at Andrews AFB to a private developer (the Project Owner [PO]).

Most of the MFH at Andrews AFB extends over 18 parcels of land on the western portion of the installation. These 18 parcels comprise 8 neighborhoods. The neighborhoods (and number of MFH units in each) are as follows: Columbus/Vandenberg (48), Menoher-Tucson (416), Bedford (90), Shannon (436), San Antonio (272), Staff Noncommissioned Officer (82), Command (6), and Wilmington/Washington (127). Three additional parcels are also subject to the Proposed Action: Farmhouse (2), Belle Chance (1), and a vacant "Fairway" parcel. **Figure 2-1** shows the general location of MFH on Andrews AFB. **Figure 2-2** shows the locations of the MFH neighborhoods and farmhouse parcels.

Three buildings eligible for listing on the National Register of Historic Places (NRHP), known as Belle Chance, would be conveyed to the PO for use as housing. Currently, Belle Chance is not occupied and has not been occupied since March 2002. The buildings to be conveyed to the PO under the MHPI include the main residence (Building 1966), a storage shed (Building 1967), and a two-car garage (Building 1968); a portion of an archeological site associated with these buildings would also be conveyed. The Air Force will satisfy its responsibilities under Section 106 of the National Historic Preservation Act (NHPA) regarding Belle Chance through the NEPA process applied to produce this EA, as provided for in 36 CFR 800.8(c). A letter agreement between the Air Force and the Maryland Historical Trust (Trust) acknowledges the Air Force finding of no adverse effect on Belle Chance due to the transfer of the buildings being subject to a Preservation Covenant that satisfies 36 CFR 800.5 by providing adequate and legally enforceable restrictions to ensure the long-term preservation of the property's historic significance. **Figure 2-3** shows the location of the Belle Chance parcel on Andrews AFB, and **Figure 2-4** shows the detailed Metes and Bounds survey for the Belle Chance parcel.

2.1.1 Initial Transactions

Under the Proposed Action, the USAF would execute agreements with the PO to convey real property, lease land, and have the PO assume responsibility to operate a rental housing development for the benefit of USAF and other personnel for 50 years at Andrews AFB. Under agreements with the USAF to operate a rental housing development, the PO would be responsible to plan, design, develop, renovate, demolish, construct, own, operate, maintain, and manage all necessary assets for MFH and designated ancillary support facilities. In exchange for providing housing, the PO would become entitled to rental income based on each occupant's Basic Allowance for Housing (BAH).

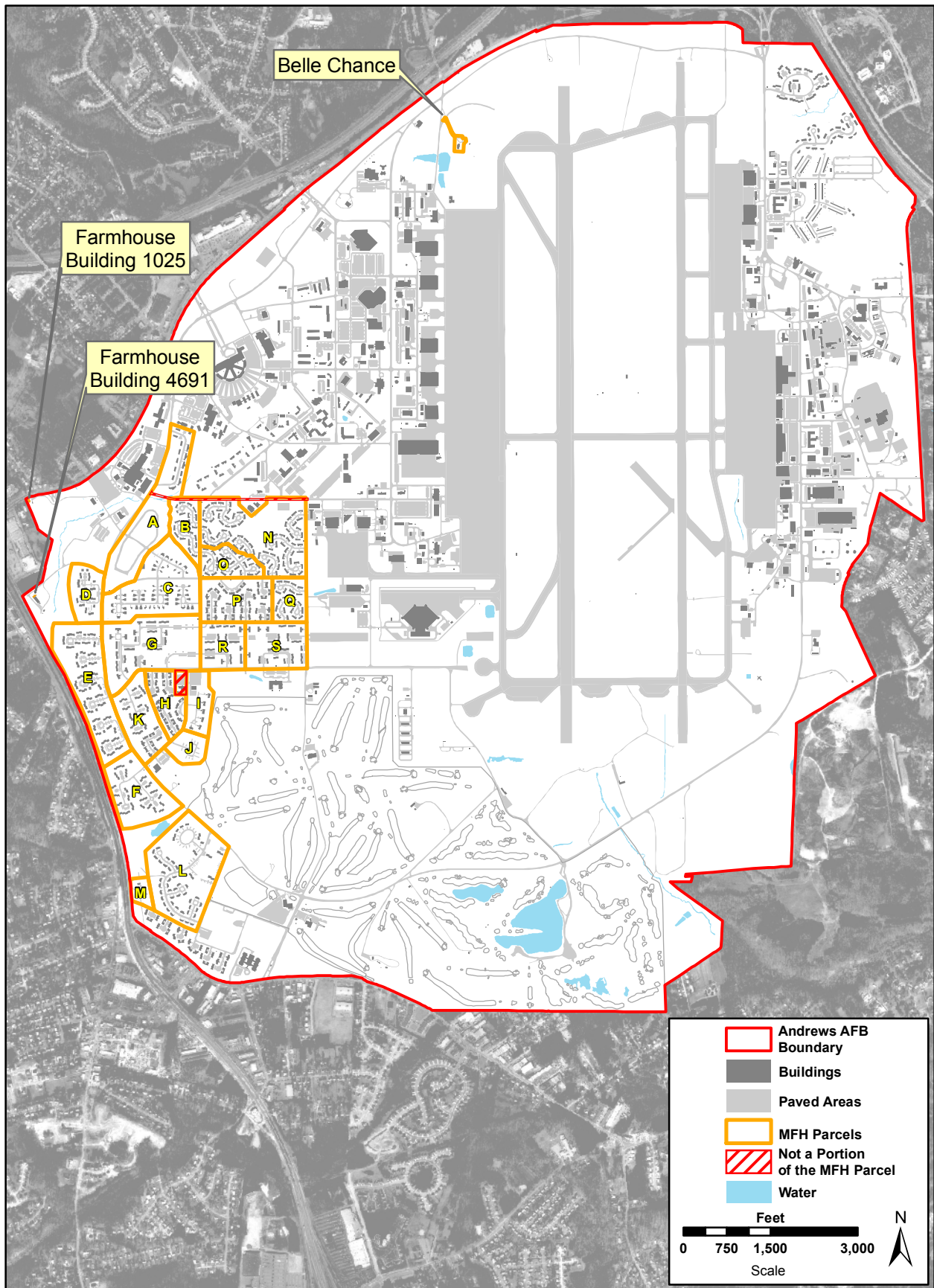


Figure 2-1. MFH Parcels on Andrews AFB

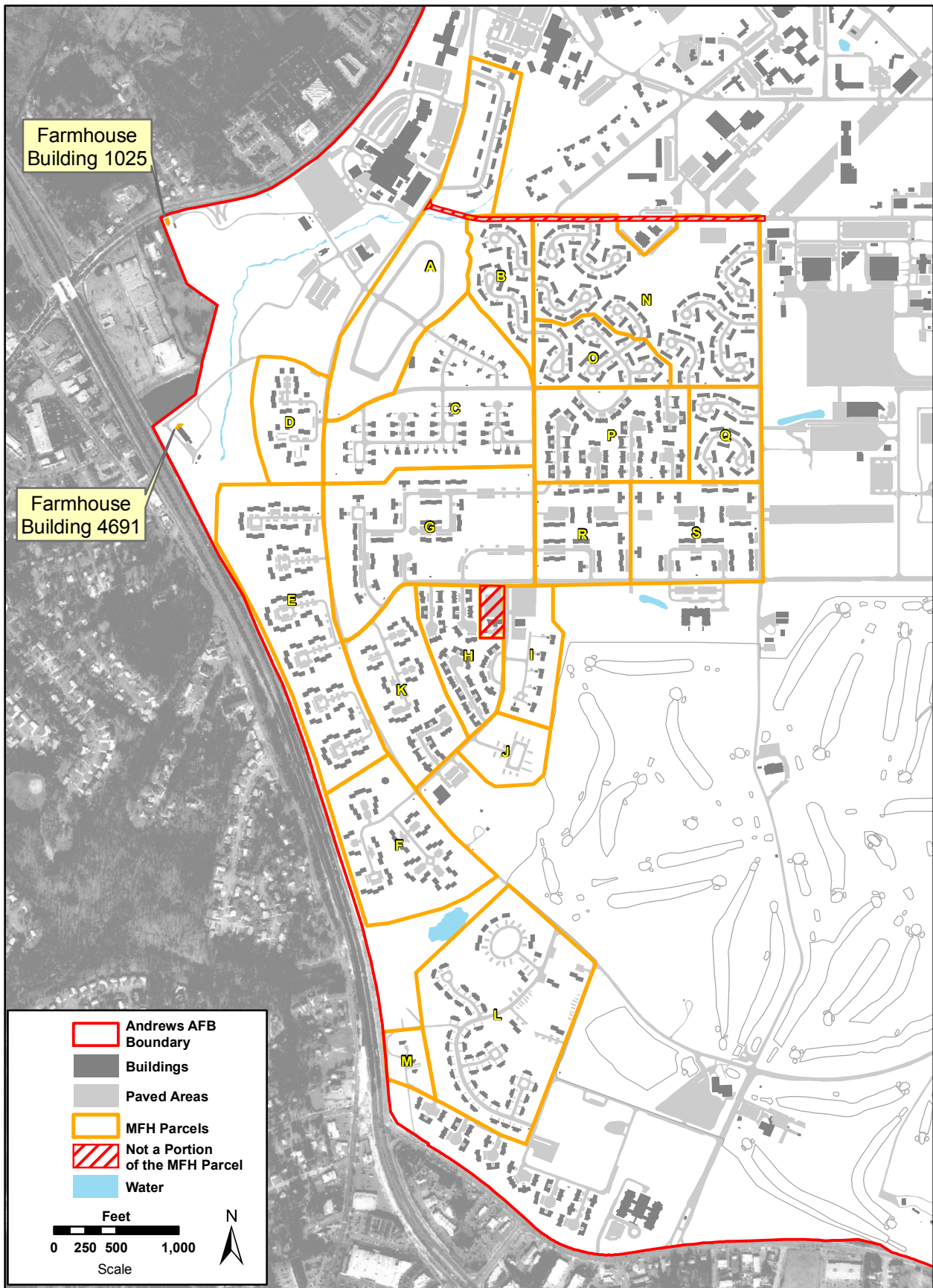


Figure 2-2. Locations of MFH and Farmhouse Parcels on Andrews AFB

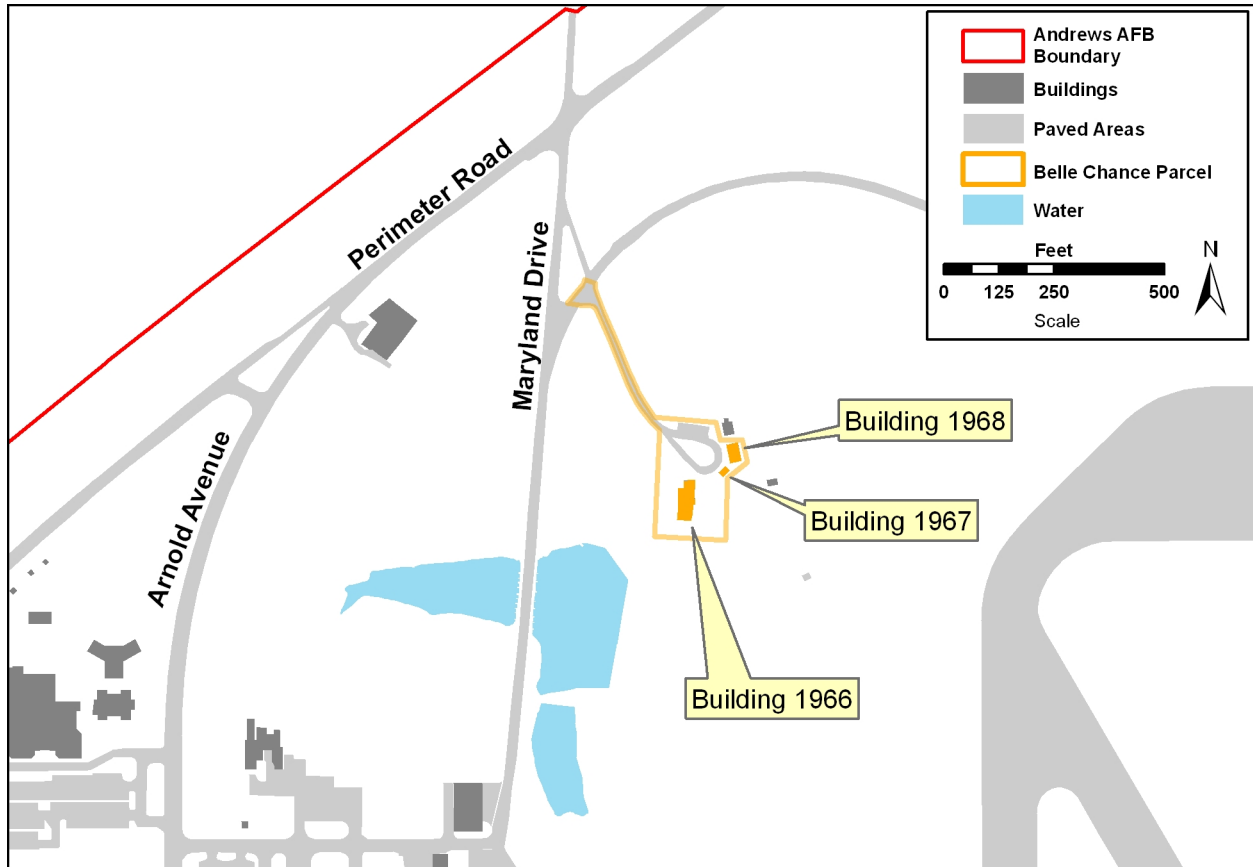


Figure 2-3. Belle Chance Parcel on Andrews AFB

Results of the Housing Requirements and Marketing Analysis (HRMA)¹ update indicate that Andrews AFB should have no more than 887 MFH units (AFCEE 2005). Accordingly, the privatization agreement with the PO would reduce the installation's MFH inventory from 1,480 units to an end-state inventory of 887 units. Specific transactions that would occur between the USAF and the selected PO would be as follows:

- The USAF would convey all 1,480 existing MFH units to the PO. The PO would retain 490 newly built or recently renovated units, renovate 139 units, construct 258 units, and demolish 851 units, resulting in an end-state inventory of 887 MFH units.
- The USAF would grant 50-year leases for approximately 406.5 acres of lands underlying all of the MFH neighborhoods, including some utilities (electrical system) and improvements such as tot lots, playgrounds, the soccer field, the baseball diamond, bus stops, sidewalks, and storm drainage. Leases for six of the parcels (Parcels N, O, P, Q, R, and S), amounting to approximately 114 acres, would terminate upon completion of demolition of MFH units on those parcels. Parcel N would be a short-term lease of 2 years, and Parcel O would be a short-term lease of 4 years. Parcels P, Q, R, and S would be short-term leases of 6 years.

¹ DOD guidance states that the local community should be the first source for satisfying the demand for housing generated by military families. The HRMA identifies current and projected supply and demand for family housing and analyzes the local housing market to determine its ability to provide suitable housing for military personnel.

- The USAF would grant a 50-year lease for approximately 1.3 acres and convey three buildings on the Belle Chance parcel to the PO. The three buildings on this property are eligible for the NRHP and would be rehabilitated according to the Secretary of the Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*.

Table 2-1 identifies the 21 parcels subject to the Proposed Action, the number of MFH units, years of construction of MFH units, and acreage.

Table 2-1. Andrews AFB Housing Parcels

Housing Parcel (Neighborhood)	No. of MFH Units	Year Built	Acres
Parcel A (Columbus/Vandenberg) ^a	48	2004	38
Parcel B (Menoher-Tucson)	42	1974	12
Parcel C (Bedford)	90	1972	36
Parcel D (Shannon)	56	1970	13
Parcel E (Shannon)	194	1968 and 1970	38
Parcel F (Shannon)	110	1966	25
Parcel G (San Antonio)	86	1972 and 2003	34
Parcel H (SNCO) ^b	82	1973	13
Parcel I (Command)	6	1966	12
Parcel J (Fairway)	0	NA	5
Parcel K (Shannon)	76	1966 and 1973	18
Parcel L (Wilmington/Washington)	124	1964–1966, and 2003	43
Parcel M (Wilmington/Washington)	3	1946	4
Parcel N (Menoher-Tucson)	160	1974	44
Parcel O (Menoher-Tucson)	54	1974	5
Parcel P (Menoher-Tucson)	116	1973	22
Parcel Q (Menoher-Tucson)	44	1974	10
Parcel R (San Antonio)	86	1972	14
Parcel S (San Antonio)	100	1972	19
Farmhouses (Buildings 1025 and 4691) ^c	2	1943 and 1946	0.2
Belle Chance (Building 1966) ^d	1	1912	1.3
Total	1,480		406.5

Notes:

^a Parcel A does not include Menoher Drive or the drainage ditches in and around the intersection of Perimeter Road and Menoher Drive.

^b Parcel H does not include the Civil Engineering Maintenance Facility (Building 4797).

^c The two farmhouses are not eligible for the NRHP.

^d The Belle Chance property includes a total of three buildings, all of which are eligible for the NRHP.

2.1.2 Project Objectives

The USAF Housing Privatization Program has identified several desired features for new construction and renovation of MFH, its privatized communities, facilities maintenance, and property management. These desired features are intended to result in substantial improvements in the overall quality of housing for personnel. In addition to the desired features articulated in the USAF Housing Privatization Program, Andrews AFB has identified additional features for implementation at the installation. The required and desired features for MFH for new housing and renovations are shown in **Appendix E**.

2.1.3 Operational Provisions

The following identify relevant matters pertaining to the proposed privatization of MFH.

Transition Plan. Implementation of the Proposed Action would include reliance on a transition plan prepared by the PO and approved by Andrews AFB. The plan would include project development, phasing out of existing units, the means by which the PO would maintain the availability of units, and the methodology for providing utilities and services during and after the transition period. The transition period would begin upon completion of contractual matters initiating the Proposed Action and would last for up to 6 years. During the transition period, the number of available MFH units would be gradually reduced from 1,480 to 887 units. At all times during the transition period, sufficient numbers of units for all eligible paygrades would be maintained.

Lease of Land. The USAF would grant the PO a lease of approximately 406.5 acres of land as shown in the parcels identified in **Table 2-1**. Leasing of the housing area parcels would be subject to several conditions imposed by the USAF. The lease would be subject to all existing easements, or those subsequently granted, as well as established access routes for roadways and utilities located, or to be located, on the premises. The lease would do the following:

- Prohibit the PO from storing hazardous wastes (above those quantities generated in routine operations and immediately disposed of) or taking any actions that would cause irreparable injury to the land. The PO would be required to comply with all Federal, state, interstate, or local applicable laws, regulations, conditions, or instructions affecting its activities. The USAF would include clauses in the lease permitting the USAF's periodic inspection of the property to ensure its safe condition and its proper use in accordance with the terms of the lease.
- Prohibit operation by the PO of satellite hazardous waste accumulation sites on Andrews AFB. The PO would be responsible for appropriate storage and disposal of hazardous waste and universal waste (e.g., fluorescent bulbs, batteries, thermostats). The PO would be responsible for any environmental fines or penalties arising from accidental, negligent, or intentional acts on the property. The PO would be responsible for the costs of disposing of solid waste generated by the MFH construction and subsequent housing use. Solid waste generated would be disposed of off-installation at the PO's expense and in accordance with source separation laws. The PO would be encouraged to recycle solid waste and work with local communities to set up a recycling program in the privatized MFH neighborhoods; however, recycling would not be mandatory in the lease.
- Prohibit the use of asbestos or asbestos-containing material (ACM) or lead-based paint (LBP) in the construction of new MFH units.
- Prohibit discharge of waste or effluent from the premises in such a manner that the discharge would contaminate streams or other bodies of water or otherwise become a public nuisance.

- Prohibit removal or disturbance of, or causing or permitting to be removed or disturbed, any historical, archeological, architectural, or cultural artifacts, relics, remains, or objects of antiquity (with the exception of approved renovations to the Belle Chance historic buildings). In the event such items should be discovered, the PO would be required to notify the installation commander or his designated representative and immediately protect the site and the material from further disturbance.
- Require maintenance of all soil and water conservation structures and the taking of appropriate measures to prevent or control soil erosion within the premises. These measures would be addressed in permits (e.g., Clean Water Act [CWA] Section 404 permit) and in storm water pollution prevention plans (SWPPPs). The PO would be required to comply with all applicable permits, including the storm water permit and accompanying SWPPP.
- The PO would be responsible for the maintenance of the streets, roadways, and trails inside the areas defined by the MFH privatization Metes and Bounds Survey. This includes the removal of trash and sand accumulation and clearing of snow and ice in the winter months.
- Prohibit the cutting of timber; mining operations; and removal of sand, gravel, or like substances from the ground.

Conveyances. All existing MFH units on Andrews AFB would be conveyed to the PO. The USAF would convey this property with encumbrances, notices, and requirements obligating the PO to certain actions. The USAF has completed an Environmental Baseline Survey to determine the location and extent of possible contamination from underground storage tanks (USTs) or other sources. The USAF would identify any easements and rights-of-way that might affect use of conveyed property. These encumbrances would be in the form of covenants in the deed and would be binding on the transferee, as well as any subsequent successors or assigns.

The negotiated terms of transfer require the PO to preserve the historic integrity of the NRHP-eligible Belle Chance buildings and associated archeological site. Correspondence with the Trust regarding the Belle Chance parcel is included in **Appendix D**.

Barrier-free Design. New MFH and ancillary supporting facilities must adhere to the *Uniform Federal Accessibility Standards* and the *Americans with Disabilities Act Accessibility Guidelines* promulgated by the Access Board (formerly known as the Architectural and Transportation Barriers Compliance Board) pursuant to the Architectural Barriers Act of 1968, Rehabilitation Act of 1973, and Americans with Disabilities Act of 1990. These standards require that at least 5 percent of new MFH units be designed and built to be accessible, or easily modifiable for access, by persons with physical disabilities.

Construction and Demolition Standards. Demolition, construction, and renovation standards reflect consideration of Prince George's County and State of Maryland building codes, standards, and regulations. Construction of MFH units would be based on sustainable design and development concepts and would seek to incorporate consideration of matters such as sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. Design, materials, equipment, and construction methods would reduce energy and water consumption to current Energy Star² criteria. Design features would include optimizing glass locations and areas; optimizing insulation in exterior walls, ceilings, and between adjoining units; weatherstripping throughout; and minimizing duct leakage. Attention to construction details, exterior fenestration materials, and passive solar energy

² The U.S. Environmental Protection Agency and the U.S. Department of Energy promote the use of energy-efficient equipment by awarding the Energy Star label to products that save energy. The agencies set energy efficiency criteria for specific consumer and commercial products. Energy Star products include appliances (refrigerators, dishwashers, and room air conditioners) and residential HVAC equipment (programmable thermostats, boilers, furnaces, heat pumps, and central air conditioners).

systems would be employed whenever possible. The PO would ensure that materials, equipment, and finishes would be durable, low-maintenance, and functional. These measures would improve environmental and economic performance of facilities through the use of established and advanced industry principles, practices, materials, and standards. In accordance with EO 13101, *Greening the Government through Waste Prevention, Recycling, and Federal Acquisition*, the PO would be encouraged to consider recycled products and environmentally preferable purchasing criteria developed by the U.S. Environmental Protection Agency (USEPA).

A Demolition Plan would be established and implemented as part of an overall Construction Management Plan. The Demolition Plan would provide a phased approach to demolition of existing units, appurtenances, and infrastructure. Underground utility mains scheduled for demolition could be capped at the main and abandoned in place; however, the PO would remove all laterals. The contractor would be responsible for handling any ACM and LBP in accordance with applicable laws, including removal, disposal, and abatement. An asbestos disposal plan would identify the proposed disposal site for any ACM. After demolition is complete (including facilities, utilities, and roads and fences, as appropriate), the PO would grade to drain and seed all areas not planned to receive new construction. The PO would haul all debris to a government-approved site off Andrews AFB. Selling or recycling demolition debris would be pursued where possible.

Operation and Maintenance. The PO would operate and maintain for 50 years all existing and new MFH units and ancillary supporting facilities, including associated parking lots and sidewalks, in accordance with the quality standards established in privatization program agreements. Andrews AFB would have the option of extending the period of operation and maintenance and the leases of land supporting MFH for an additional 25 years.

Rental Rates and Payments. The rental rate to be paid by any military member would not exceed his or her BAH. Andrews AFB would continue to categorize MFH by grade group. Unit rents would be fixed by type of unit.

Utilities. The PO would pay all utility costs until utility meters are installed on each housing unit. Until meters are installed on each unit, the military member would surrender his or her entire BAH for rent and utilities. No later than the end of the Transition Period (approximately 6 years), the PO must have individual electric and natural gas meters installed on the 887 end-state units. The PO would then establish a fixed rent for those units at an amount not to exceed the BAH rate minus an amount sufficient to cover 110 percent of estimated average reasonable utility charges at the dependent rate of the military grade that the unit is designated for, in accordance with the Project Development Demographics.

The electrical system would be included in the 50-year lease. However, the natural gas, water, and sewer systems are already under utility privatization agreements; the computer network lines and cable television lines are privately owned; and the government telephone cable would be retained by Andrews AFB. Furthermore, the water tower in Parcel F would be retained by Andrews AFB.

Occupancy Guarantee. Andrews AFB would not guarantee the level of occupancy of MFH by military members. The Andrews AFB Housing Office would provide "Referral Tenants." All military personnel assigned to the local area would be required to process through the Andrews AFB Housing Office upon arrival prior to signing a lease for housing. Freedom of housing choice would be preserved. The PO would compile and maintain a waiting list. After the transition period, if vacancy rates exceed 5 percent of the end-state number for more than 3 consecutive months, the PO may rent to other eligible tenants at unrestricted rental rates. Should this type of situation arise, the PO would be allowed to fill only the number of rental units necessary to bring the vacancy rate to an established agreed-upon percent.

Offering of vacant units to other eligible tenants would be based on a priority list. Other eligible tenants would include (listed in descending order of priority):

- Other active-duty military members and families (including unaccompanied military members)
- Federal civil service employees
- Retired military members and families
- Guard and Reserve military members and families
- Retired Federal civil service employees
- DOD contractor or permanent employees (U.S. citizens)
- Members of the general public (with prior written notice to the government).

Municipal Services. Andrews AFB would provide fire, law enforcement services, and other emergency services to MFH. The level of service would include emergency response and force protection. The PO would reflect these costs in its operating budget and reimburse the installation's service agency for all actual costs incurred for this level of service.

2.2 Alternatives

2.2.1 Alternatives for Family Housing

The USAF has identified three alternatives to the Proposed Action as presented in **Section 2.1**, as well as the No Action Alternative. These alternatives are presented below.

The Partial Privatization Alternative. Under this alternative, the USAF would privatize only a portion of Andrews AFB's MFH inventory. Family housing in good condition (not needing demolition or renovation) would remain subject to USAF management for maintenance and operational control.

Privatization of only a portion of Andrews AFB's MFH inventory would have three substantial drawbacks. First, the condition of the MFH retained by the USAF would change over time, resulting in a need for its renovation or replacement. Failure to include the entire inventory of housing in the privatization transaction would only delay action to provide adequate housing for airmen and their dependents. Second, two management regimes (the USAF's and the PO's) would not be as cost-effective as one. From the PO's perspective, maximum potential cash flow is important to support development and operation of the ancillary supporting facilities desired by the installation, activities that traditionally do not provide independent sources of revenue to sustain them. Third, partial privatization would not fully meet the USAF's purpose of and need for the Proposed Action. This alternative does not meet criteria (b) and (g) as identified in **Section 1.3**. Therefore, this alternative will not be evaluated in detail in the EA.

The Private Sector Reliance Alternative. Under this alternative, the USAF would rely solely on the private sector to meet the housing needs of personnel assigned to Andrews AFB. The USAF would terminate MFH programs, dispose of existing MFH units, and convert the land now supporting housing areas to other uses at Andrews AFB.

The alternative is premised, in part, on the view that competitive marketplace forces would lead to the creation of sufficient affordable, quality MFH. Data vary but, in general, experience shows that military members and their families living off-installation must cover between 15 and 20 percent of their costs

out-of-pocket. Moreover, living on-installation has several intangible benefits to military members and their families. These include camaraderie and esprit de corps among the military personnel, a sense of “family” among dependents (especially during military deployments), proximity to the workplace (thereby avoiding lengthy commutes), and each military member’s comfort level in knowing that his or her dependents are residing in a safe community while they are deployed or serving on temporary duty at a distant location.

As a practical matter, termination of Andrews AFB MFH would prove difficult. If MFH were to be terminated over a period of years, without maintenance funding, the existing housing would become unsuitable because of age or necessity of repairs. Residents could then find themselves living in blighted and partially abandoned neighborhoods. If MFH were to be terminated at once, it is unlikely that the private sector could provide the requisite amount of affordable, quality housing units, as well as schools, shops, roads, and other support amenities, on short notice.

Termination of MFH programs would involve abandonment of immense investments in those facilities. The various consequences of reliance on the private sector and the management difficulties of effecting termination of USAF MFH would prove challenging. In light of the aggregate value of MFH units amenable to renovation, termination of a family housing construction and maintenance program would gravely contravene the fiscal responsibilities that the U.S. Congress expects of the USAF. This alternative does not meet criteria (a), (b), (f), and (g) as identified in **Section 1.3**. Therefore, this alternative is not reasonable and will not be evaluated in detail in the EA.

The Leasing Alternative. Statutory authorities exist for the USAF to ensure availability of adequate, affordable housing at Andrews AFB through use of long-term leases of housing for military family use. Key aspects of the two laws providing these authorities are summarized below.

- *Long-term leasing of military family housing to be constructed.* Family housing obtained through use of this authority, which appears at 10 U.S.C. 2835, is most often referred to as “Section 801 housing.” Under this authority, the USAF may, through competitive contract procedures, have a developer build or renovate (to residential use) family housing units near an installation. Housing units under this authority must meet DOD specifications. The USAF may then lease the units for use as MFH for a period of not more than 20 years. At the end of the lease term, the USAF has the option to purchase the MFH units from the PO.
- *Military housing rental guarantee program.* Family housing obtained through use of this authority, which appears at 10 U.S.C. 2836, is most often referred to as “Section 802 housing.” Under this authority, the USAF may award a competitive contract to the PO or a state or local housing authority to construct or rehabilitate housing on or near an installation having a shortage of housing for personnel with or without accompanying dependents. The USAF contractually guarantees the occupancy levels of the housing units, at rental rates comparable to those for similar units in the same general market. Housing units under this authority must comply with DOD specifications or, at the discretion of the Service secretary, local building codes. A rental guarantee agreement may not exceed 25 years in duration; it may be renewed only for housing on government-owned land. The agreement may provide that utilities, trash collection, snow removal, and entomological services be furnished by the USAF at no cost to the occupant to the same extent such services are provided to occupants of MFH.

USAF-wide, there has been only limited experience with either of the foregoing authorities. An important drawback of the Section 801 and Section 802 housing programs is related to what is known as budget “scoring,” the method of accounting for Federal government obligations as required by the Budget Enforcement Act of 1990. Scoring ensures that all government obligations are accounted for when long-

term liability is incurred (during the first year of a project). Scoring guidelines issued by the Federal Office of Management and Budget require that a project be fully funded with sufficient budget authority in its first year to cover the government's long-term commitment. In other words, all potential costs associated with long-term leasing or rental guarantee programs must be recognized in the first year, and they must be considered part of the USAF's total obligational authority (the total monies appropriated by Congress for use by the USAF in a given year). For some privatization projects, such as military-leased housing, the USAF's obligations for scoring purposes amount to the net present value of the total rent under the lease. These amounts can be nearly as great as the sums required under traditional military construction financing for USAF-initiated construction of similar facilities.

The Section 801 housing program and Section 802 rental guarantee program only partially address the purpose of and need for the Proposed Action. Because of the scoring guidelines, the USAF would obtain very little or no leverage benefit.

The enactment of new authorities in the MHPI suggests Congress's recognition that the drawbacks of Section 801 and Section 802 outweigh the potential benefits to the USAF. Although use of the authorities in either Section 801 or Section 802 or both would be possible, their use would not be reasonable when compared with the greater flexibility and economic advantages of the new authorities offered by the MHPI to the USAF and its members' families. This alternative does not meet criteria (a), (g), and (h) as identified in **Section 1.3**. Therefore, this alternative will not be evaluated in detail in the EA.

2.2.2 The No Action Alternative

CEQ regulations require inclusion of the No Action Alternative. The No Action Alternative serves as a baseline against which the impacts of the Proposed Action and Alternatives can be evaluated.

Under the No Action Alternative, the USAF would not implement the Proposed Action but would continue to provide for the MFH needs of personnel at Andrews AFB through use of traditional military maintenance and construction procedures. Andrews AFB would continue to obtain funding for MFH through the Congressional authorization and appropriations process. Based on historical trends, it is assumed that the amount of Congressional funding for MFH would not change and that the housing maintenance backlog would continue to increase. Any major changes to existing housing or construction of new housing would require that appropriate NEPA analyses be completed before implementing such actions.

3. Affected Environment

This section describes the environmental and socioeconomic conditions most likely to be affected by the Proposed Action and provides information to serve as a baseline from which to identify and evaluate environmental and socioeconomic changes likely to result from implementation of the Proposed Action. Baseline conditions represent current conditions.

In compliance with NEPA and CEQ guidelines, the description of the affected environment focuses on those resource areas and conditions potentially subject to effects. These resource areas and conditions are noise, land use, air quality, safety, geological resources, water resources, biological resources, cultural resources, socioeconomics and environmental justice, infrastructure, and hazardous materials and wastes. The term “resource areas” refers to those aspects of the human environment that can be affected by a proposed action. Resource areas are organized into broad groupings of environmental assets, such as geological, water, or biological resources. Some aspects of the environment reflect conditions imposed by humans. These include land use and hazardous waste sites.

3.1 Noise

3.1.1 Definition of the Resource

Sound is defined as a particular auditory effect produced by a given source, for example the sound of rain on the roof. Sound is measured with instruments that record instantaneous sound levels in decibels (dB). A-weighted sound level measurements (dBA) are used to characterize sound levels that can be sensed by the human ear. “A-weighted” denotes the adjustment of the frequency content of a sound producing event to represent the way in which the average human ear responds to the audible event. All sound levels analyzed in this EA are A-weighted.

Noise and sound share the same physical aspects, but noise is considered a disturbance while sound is defined as an auditory effect. Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Noise can be intermittent or continuous, steady or impulsive, and might involve any number of sources and frequencies. It can be readily identifiable or generally nondescript. Human response to increased sound levels varies according to the source type, characteristics of the sound source, distance between source and receptor, receptor sensitivity, and time of day. How an individual responds to the sound source will determine if the sound is interpreted as an enjoyable sound or an annoying noise. Affected receptors are specific (i.e., schools, churches, or hospitals) or broad areas (i.e., nature preserves or designated districts) in which occasional or persistent sensitivity to noise above ambient levels exists.

Ambient Sound Levels. Most people are exposed to sound levels of 50 to 55 dBA or higher on a daily basis. Noise levels in residential areas vary depending on the housing density and location. As shown on **Table 3-1**, a normal suburban residential area is about 55 dBA, which increases to 60 dBA for an urban residential area, and 80 dBA in the downtown section of a city.

Construction Sound Levels. Building construction, modification, and demolition work can cause an increase in sound that is well above the ambient level. A variety of sounds come from graders, pavers, trucks, welders, and other work processes. **Table 3-2** lists noise levels associated with common types of construction equipment. Construction equipment usually exceeds the ambient sound levels by 20 to 25 dBA in an urban environment and up to 30 to 35 dBA in a quiet suburban area.

Table 3-1. Typical Outdoor Noise Levels

Sound Levels (dBA)	Location
50	Residential area in a small town or quiet suburban area
55	Suburban residential area
60	Urban residential area
65	Noisy urban residential area
70	Very noisy urban residential area
80	City noise (downtown of major metropolitan area)
88	Third floor apartment in a major city, next to a freeway

Source: FHWA 1980

Table 3-2. Predicted Noise Levels for Construction Equipment

Construction Category and Equipment	Predicted Noise Level at 50 feet (dBA)
Grading	
Bulldozer	87
Grader	85
Water Truck	88
Paving	
Paver	89
Roller	74
Demolition	
Loader	85
Haul Truck	88
Building Construction	
Generator Saw	81
Industrial Saw	83
Welder	74
Truck	80
Forklift	67
Crane	83

Source: COL 2001

3.1.2 Existing Conditions

Andrews AFB is in Prince George's County, Maryland, which is a populated and growing region. Consequently, the roadways adjacent to the installation are heavily traveled. On-installation MFH is adjacent to Branch Avenue to the southwest and Allentown Road to the northwest. A partial barrier separates installation property from these roadways which reduces the impacts from the traffic noise on the residents in MFH.

As discussed in **Section 3.2.2**, land use adjacent to the MFH and farmhouse parcels is mixed consisting of outdoor recreation, community services, and airfield facilities. Land use adjacent to the Belle Chance parcel includes industrial and aircraft operations and maintenance.

Minor amounts of noise emanate from the majority of uses immediately surrounding the MFH and farmhouse parcels. However, there is a great deal of aircraft and rotocraft operations at Andrews AFB. The Belle Chance parcel is inside of the 65- to 69-dBA noise zone based on the current Air Installation Compatible Use Zone (AICUZ) study for Andrews AFB. USAF guidance discourages residential development when noise levels exceed 65 dBA; sound attenuation materials must be used in the design and construction of structures to achieve the necessary noise level reduction (USAF 1999). The remaining MFH units are outside of the 65 dBA noise contour. **Figure 3-1** shows the existing noise contours on Andrews AFB.

3.2 Land Use

3.2.1 Definition of the Resource

The term "land use" refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel. In many cases, land use descriptions are codified in local zoning laws. There is, however, no nationally recognized convention or uniform terminology for describing land use categories. As a result, the meanings of various land use descriptions, "labels," and definitions vary among jurisdictions.

Two main objectives of land use planning are to ensure orderly growth and compatible uses among adjacent property parcels or areas. Compatibility among land uses fosters the societal interest of obtaining the highest and best uses of real property. Tools supporting land use planning include written master plans/management plans and zoning regulations. In appropriate cases, the location and extent of a proposed action needs to be evaluated for its potential effects on a project site and adjacent land uses. The foremost factor affecting a proposed action in terms of land use is its compliance with any applicable land use or zoning regulations. Other relevant factors include matters such as existing land use at the project site, the types of land uses on adjacent properties and their proximity to a proposed action, the duration of a proposed activity, and its "permanence."

3.2.2 Existing Conditions

Andrews AFB encompasses 6,828 acres in Maryland. The main installation comprises 4,346 acres of land in northwestern Prince George's County, while outlying sites in Prince George's and Anne Arundel counties total 1,635 and 852 acres, respectively. Flight operations from more than 100 aircraft occur at Andrews AFB (AAFB 2005a). The installation is divided into an east and west side by the airfield, which runs north to south. The majority of services on the installation including the MFH units are on the western side of the installation. The majority of airfield operations and administrative/industrial facilities are on the eastern side of the installation.

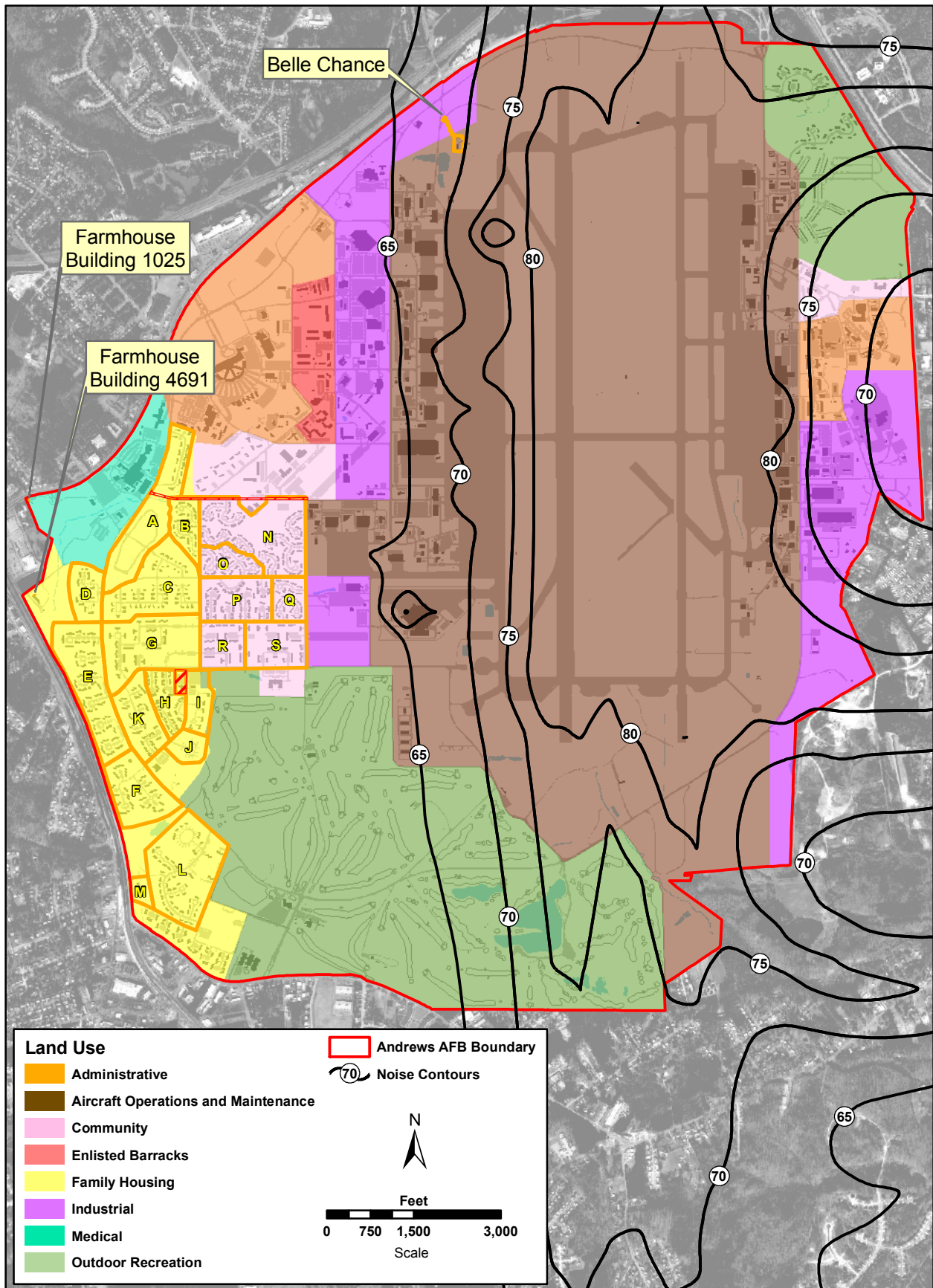


Figure 3-1. Existing Noise Contours and Land Use on Andrews AFB

The general land use categories on Andrews AFB include airfield, airfield operations and maintenance, industrial, administrative, community, medical/dental, family housing, enlisted barracks, and recreation (AAFB 2006). Andrews AFB has developed a Strategic Plan, which fosters development that is compatible with existing and future land uses to maintain functional efficiency to ensure compatibility (AAFB 2006). Aircraft operations and maintenance is the predominant land use on the installation

Andrews AFB was originally built in an undeveloped area of Prince George's County, but the surrounding areas have since been developed. Directly adjacent to the installation are the communities of Morningside, Woodyard, Clinton, and Camp Springs (AAFB 2005a). The predominant land uses that border Andrews AFB include residential, commercial, and industrial (AAFB 2003a). The closest off-installation community to the MFH area is Camp Springs, which has an approximate population of 15,000 people. The land uses in Camp Springs that are adjacent to Andrews AFB are mostly residential.

Land uses near the project area are mixed and include unaccompanied housing to the north, and the golf course and outdoor recreation to the south. East of the MFH units are airfield operations and maintenance facilities, but the MFH units have maintained a compatible use with these. Land use adjacent to the Belle Chance parcel includes airfield operations and maintenance to the south, the runways to the east, and Flight Line/industrial to the west and north. As noted in **Section 3.1.2**, noise in the Belle Chance parcel exceeds the 65-dBA noise contour, which is considered incompatible with residential use without noise attenuation measures in accordance with Air Force policy (USAF 1999) (see **Figure 3-1**).

3.3 Air Quality

3.3.1 Definition of the Resource

In accordance with Federal Clean Air Act (CAA) requirements, the air quality in a given region or area is measured by the concentration of various pollutants in the atmosphere. The measurements of these "criteria pollutants" in ambient air are expressed in units of parts per million (ppm), milligrams per cubic meter (mg/m^3), or micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). The air quality in a region is a result not only of the types and quantities of atmospheric pollutants and pollutant sources in an area, but also surface topography, the size of the topological "air basin," and the prevailing meteorological conditions.

The CAA directed USEPA to develop, implement, and enforce strong environmental regulations that would ensure clean and healthy ambient air quality. To protect public health and welfare, USEPA developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), for pollutants that have been determined to impact human health and the environment. USEPA established both primary and secondary NAAQS under the provisions of the CAA. NAAQS are currently established for six criteria air pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter (including particulate matter equal to or less than 10 microns in diameter [PM_{10}] and particulate matter equal to or less than 2.5 microns in diameter [$\text{PM}_{2.5}$]), and lead (Pb). The primary NAAQS represent maximum levels of background air pollution that are considered safe, with an adequate margin of safety to protect public health. Secondary NAAQS represent the maximum pollutant concentration necessary to protect vegetation, crops, and other public resources along with maintaining visibility standards. **Table 3-3** presents the primary and secondary NAAQS that apply to nationwide air quality (USEPA 2006a).

Table 3-3. National Ambient Air Quality Standards

Pollutant	Standard Value		Standard Type
CO			
8-hour Average ^a	9 ppm	(10 mg/m ³)	Primary and Secondary
1-hour Average ^a	35 ppm	(40 mg/m ³)	Primary
NO₂			
Annual Arithmetic Mean	0.053 ppm	(100 µg/m ³)	Primary and Secondary
O₃			
8-hour Average ^b	0.08 ppm	(157 µg/m ³)	Primary and Secondary
1-hour Average ^c	0.12 ppm	(240 µg/m ³)	Primary and Secondary
Pb			
Quarterly Average	--	1.5 µg/m ³	Primary and Secondary
PM₁₀			
Annual Arithmetic Mean ^d	--	50 µg/m ³	Primary and Secondary
24-hour Average ^a	--	150 µg/m ³	Primary and Secondary
PM_{2.5}			
Annual Arithmetic Mean ^e	--	15 µg/m ³	Primary and Secondary
24-hour Average ^f	--	65 µg/m ³	Primary and Secondary
SO₂			
Annual Arithmetic Mean	0.03 ppm	(80 µg/m ³)	Primary
24-hour Average ^a	0.14 ppm	(365 µg/m ³)	Primary
3-hour Average ^a	0.5 ppm	(1,300 µg/m ³)	Secondary

Source: USEPA 2006a

Notes: Parenthetical values are approximate equivalent concentrations.

^a Not to be exceeded more than once per year.

^b To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.

^c (a) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is ≤ 1. (b) As of June 15, 2005, USEPA revoked the 1-hour ozone standard in all areas except the 14 8-hour ozone nonattainment Early Action Compact Areas.

^d To attain this standard, the expected annual arithmetic mean PM₁₀ concentration at each monitor within an area must not exceed 50 µg/m³.

^e To attain this standard, the 3-year average of the annual arithmetic mean PM_{2.5} concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m³.

^f To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 65 µg/m³.

Although O₃ is considered a criteria air pollutant and is measurable in the atmosphere, it is not often considered a regulated air pollutant when calculating emissions because O₃ is typically not emitted directly from most emissions sources. Ozone is formed in the atmosphere by photochemical reactions involving sunlight and previously emitted pollutants or “O₃ precursors.” These O₃ precursors consist primarily of nitrogen oxides (NO_x) and volatile organic compounds (VOCs) that are directly emitted from

a wide range of emissions sources. For this reason, regulatory agencies attempt to limit atmospheric O₃ concentrations by controlling VOC pollutants (also identified as reactive organic gases) and NO₂.

The CAA and USEPA delegated responsibility for ensuring compliance with NAAQS to the states and local agencies. As such, each state must develop air pollutant control programs and promulgate regulations and rules that focus on meeting NAAQS and maintaining healthy ambient air quality levels. These programs are detailed in State Implementation Plans (SIPs) that must be developed by each state or local regulatory agency and approved by USEPA. A SIP is a compilation of regulations, strategies, schedules, and enforcement actions designed to move the state into compliance with all NAAQS. Any changes to the compliance schedule or plan (e.g., new regulations, emissions budgets, controls) must be incorporated into the SIP and approved by USEPA.

In 1997, USEPA initiated work on new General Conformity rules and guidance to reflect the new 8-hour O₃, PM_{2.5}, and regional haze standards that were promulgated in that year. The 1-hour O₃ standard will no longer apply to an area 1 year after the effective date of the designation of that area for the 8-hour O₃ NAAQS. The effective designation date for most areas was June 15, 2004; Andrews AFB was included in one of the effective areas designated (USEPA 2006b). USEPA designated PM_{2.5} nonattainment areas in December 2004, and finalized the PM_{2.5} implementation rule in January 2005.

The General Conformity Rule and the promulgated regulations found in 40 CFR Part 93 exempt certain Federal actions from conformity determinations (e.g., contaminated site cleanup and natural emergency response activities). Other Federal actions are assumed to conform if total indirect and direct project emissions are below *de minimis* levels presented in 40 CFR 93.153. The threshold levels (in tons per year [tpy] of pollutant) depend upon the nonattainment status that USEPA has assigned to a nonattainment area. Once the net change in nonattainment pollutants is calculated, the Federal agency must compare them to the *de minimis* thresholds.

Title V of the CAA Amendments of 1990 requires states and local agencies to permit major stationary sources. A major stationary source is a facility (i.e., plant, base, or activity) that can emit more than 100 tpy of any one criteria air pollutant, 10 tpy of a hazardous air pollutant, or 25 tpy of any combination of hazardous air pollutants. However, lower pollutant-specific “major source” permitting thresholds apply in nonattainment areas. For example, the Title V permitting threshold for a “moderate” O₃ nonattainment area is 50 tpy of potential VOC or NO_x emissions. The purpose of the permitting rule is to establish regulatory control over large, industrial-type activities and monitor their impact on air quality.

Federal Prevention of Significant Deterioration (PSD) regulations also define air pollutant emissions from proposed major stationary sources or modifications to be “significant” if (1) a proposed project is within 10 kilometers of any Class I area, and (2) regulated pollutant emissions would cause an increase in the 24-hour average concentration of any regulated pollutant in the Class I area of 1 µg/m³ or more [40 CFR 52.21(b)(23)(iii)]. PSD regulations also define ambient air increments, limiting the allowable increases to any area’s baseline air contaminant concentrations, based on the area’s designation as Class I, II, or III [40 CFR 52.21(c)]. A Class I area is a designated National Park of 6,000 acres or wilderness of 5,000 acres.

3.3.2 Existing Conditions

The climate at Andrews AFB is temperate and influenced by an easterly air flow that produces frequent successions of high and low pressure systems. Rainfall is generally distributed throughout the year, with summer being the wettest season. The average annual temperature at Andrews AFB is 56 degrees Fahrenheit (°F), the mean annual precipitation is 42.5 inches, the mean average snowfall is 21.5 inches, and the average wind speed is 6 knots (AAFB 2001).

Under the authority of the CAA and subsequent regulations, USEPA has divided the country into geographical regions known as Air Quality Control Regions (AQCRs) to evaluate compliance with the NAAQS. Through the CAA, Congress has stated that the prevention and control of air pollution belongs at the state and local level, thus USEPA has delegated enforcement of the PSD and Title V programs to the Maryland Department of the Environment (MDE). The MDE has adopted the NAAQS by reference, thereby requiring the use of the standards within the state of Maryland.

Andrews AFB is in Prince George's County, Maryland, within the boundaries of the National Capital Interstate AQCR, which consists of Washington, D.C.; Montgomery and Prince George's counties, Maryland; Arlington, Fairfax, Loudoun, and Prince William counties, Virginia; and the cities of Alexandria, Fairfax, and Falls Church, Virginia (40 CFR 81.12).

Based on historical ambient air quality monitoring records, Prince George's County (including Andrews AFB) has been designated by the USEPA as a "moderate" nonattainment area for 8-hour O₃. Prince George's County is within a nonattainment area for PM_{2.5}; is in a maintenance area for CO; and is unclassified/attainment for PM₁₀, NO₂, and Pb (USEPA 2006a). A maintenance area is a designation used for an area that was nonattainment and now has achieved attainment; however, the area must prove attainment by remaining in attainment for a period designated by the USEPA (usually 2 to 3 years). Unclassifiable areas are those areas that have not had ambient air monitoring and are assumed to be in attainment with NAAQS.

As required under MDE rules and regulations, each year Andrews AFB compiles and submits an inventory of regulated pollutant emissions from permitted stationary sources. This comprehensive inventory includes stationary/permitted equipment, as well as fugitive and area sources of regulated pollutants generated during the reporting period. In 2005, criteria pollutant emissions were reported to be 15.4 tons CO, 15.8 tons NO_x, 4.1 tons VOC, 5.0 tons SO_x, and 1.3 tons PM₁₀ (89 CES/CEV 2006).

3.4 Safety

3.4.1 Definition of the Resource

A safe environment is one in which there is no, or an optimally reduced, potential for death, serious bodily injury or illness, or property damage. Human health and safety addresses (1) workers' health and safety during demolition activities and facilities construction, and (2) public safety during demolition and construction activities and during subsequent operations of those facilities.

Construction site safety is largely a matter of adherence to regulatory requirements imposed for the benefit of employees and implementation of operational practices that reduce risks of illness, injury, death, and property damage. The health and safety of onsite military and civilian workers are safeguarded by numerous DOD and USAF regulations designed to comply with standards issued by the Occupational Safety and Health Administration (OSHA) and USEPA. These standards specify the amount and type of training required for industrial workers, the use of protective equipment and clothing, engineering controls, and maximum exposure limits for workplace stressors. Compliance with OSHA and other applicable laws and regulations for the protection of employees is exclusively the obligation of the commercial contractor. Government employees at Andrews AFB must comply with AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health Program*.

Safety and accident hazards can often be identified and reduced or eliminated. Necessary elements for an accident-prone situation or environment include the presence of the hazard itself together with the exposed (and possibly susceptible) population. The degree of exposure depends primarily on the proximity of the hazard to the population. Activities that can be hazardous include transportation,

maintenance and repair activities, and the creation of highly noisy environments. The proper operation, maintenance, and repair of vehicles and equipment carry important safety implications. Any facility or human-use area with potential explosive or other rapid oxidation process creates unsafe environments for nearby populations. Extremely noisy environments can also mask verbal or mechanical warning signals such as sirens, bells, or horns.

3.4.2 Existing Conditions

All contractors performing construction activities are responsible for following OSHA regulations and are required to conduct construction activities in a manner that does not pose any risk to workers or personnel. Industrial hygiene programs address exposure to hazardous materials, use of personal protective equipment, and use and availability of Material Safety Data Sheets. Industrial hygiene is the responsibility of contractors, as applicable. Contractor responsibilities are to review potentially hazardous workplaces; to monitor exposure to workplace chemical (e.g., asbestos, lead, hazardous material), physical (e.g., noise propagation), and biological (e.g., infectious waste) agents; to recommend and evaluate controls (e.g., ventilation, respirators) to ensure personnel are properly protected or unexposed; and to ensure a medical surveillance program is in place to perform occupational health physicals for those workers subject to any accidental chemical exposures or engaged in hazardous waste work. There are emergency services (i.e., police, fire, and ambulance services) on Andrews AFB. Therefore, emergency situations in MFH can be responded to within a quick timeframe. No aircraft safety zones (i.e., clear zones and accident potential zones) or quantity-distance arcs are within the MFH area.

3.5 Geological Resources

3.5.1 Definition of the Resource

Geological resources consist of the earth's surface and subsurface materials. Within a given physiographic province, these resources typically are described in terms of topography, geology, soils, and where applicable, minerals and paleontology.

Topography. Topography is the form of the land surface as defined by the relative positions and elevations of natural and human-made features that characterize the configuration of the land. An area's topography is influenced by many factors, including human activity, the structure, stability and composition of the underlying geological material, climatic conditions, and erosion. Information about an area's topography typically encompasses surface elevations, slope, and physiographic features (i.e., mountains, ravines, or depressions).

Geology. Geology encompasses the rocks, minerals, physical structure, and subsurface conditions of an area that affect and characterize the configuration of surface and subsurface features and materials and their inherent properties. Geologic information is derived from field analysis based on observations of the surface and borings to identify subsurface composition. Examples of factors influencing the ability of geological resources to support structural development are seismic properties (i.e., potential for subsurface shifting, faulting, or crustal disturbance), weathering characteristics, topography, and structural stability.

Soils. Soils are unconsolidated materials overlying bedrock or other parent material. They result from weathering processes on parent material and are typically described in terms of their type of complex, slope, and physical characteristics. Soil characteristics are considered because they can limit or restrict use. Examples of soil characteristics that can limit use include poor drainage, excessive wetness, excessive erodibility, the occurrence of rock at shallow depths, the presence of shrink-swell clays, or the occurrence of prime farmland. Soil characteristics can preclude proposed uses, require the application of

special engineering designs, or require coordination with Federal or state agencies. In appropriate cases, soil properties must be examined for compatibility with particular construction activities or types of land use.

Prime farmland is protected under the Farmland Protection Policy Act of 1981 (7 CFR Part 658, July 5, 1984). Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. The soil qualities, growing season, and moisture supply are those needed for a well-managed soil to produce a sustained high yield of crops in an economic manner. The land could be cropland, pasture, rangeland, or other land, but not urban built-up land or water. The intent of the Farmland Protection Policy Act is to minimize the extent to which Federal programs contribute to the unnecessary or irreversible conversion of farmland to nonagricultural uses. The Farmland Protection Policy Act also ensures that Federal programs are administered in a manner that, to the extent practicable, will be compatible with private, state, and local government programs and policies to protect farmland. The Natural Resources Conservation Service (NRCS) is responsible for overseeing compliance with the Farmland Protection Policy Act.

Implementation of erosion and sediment controls and storm water best management practices (BMPs) during and following construction activities are typically required by state or local ordinances. The *Maryland Erosion and Sediment Control Guidelines for State and Federal Projects* (Code of Maryland Regulations [COMAR] 26.17.01) require development and approval of an erosion and sediment control plan, and implementation of soil erosion and sediment-control measures for all clearing or grading activities that disturb more than 5,000 square feet of land or involve more than 100 cubic yards of earth movement. The purpose of the erosion and sediment-control plan is to provide a variety of measures to control erosion and sedimentation and potential storm water-related water quality impacts associated with land development, and to incorporate an overall approach for controlling runoff during construction. Storm water management guidelines are discussed in **Section 3.6**.

3.5.2 Existing Conditions

Topography. Andrews AFB is near the western edge of the middle Atlantic Coastal Plain physiographic province. The fall line that forms the boundary between the Piedmont and Coastal Plain physiographic provinces is approximately 12 miles west of the main installation. The Blue Ridge Mountains are about 60 miles west of the main installation, and the Chesapeake Bay is 25 miles east. The Coastal Plain physiographic province is primarily characterized by unconsolidated substrata. The vast majority of this area is level to gently sloping with local relief generally being less than 100 feet except for along moderately steep stream banks. Andrews AFB is in a level plateau between the Anacostia River to the west and the Patuxent River to the east. Land surface elevations on Andrews AFB vary from approximately 215 feet above mean sea level (amsl) to about 281 feet above amsl (AAFB 2001).

Geology. Much of the surficial geology on the main installation is composed of late Tertiary Period Pliocene Epoch (approximately 7 million years old) upland deposits. These deposits consist of irregularly bedded cobbles, gravel, and fine sand intermixed with silt or clay, that 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 on the installation (AAFB 2001).

The mid-Atlantic and central Appalachian region, including Maryland, is characterized by a moderate amount of low-level earthquake activity, but their causes are largely a matter of speculation. In Maryland, there are numerous faults, but none are known or suspected to be active. Because of the

relatively low seismic energy release, this region has received little attention from earthquake seismologists (MGS 2005).

Soils. Two major soil associations are present in the Andrews AFB area, the Sassafras-Croom association and the Beltsville-Leonardtown-Chillum association (AAFB 2001). The Sassafras-Croom association is found along major drainageways to Tinker Creek and Piscataway Creek. It consists of gently sloping to steep, well-drained, dominantly gravelly soils with a compact subsoil or substratum. This association consists of 30 percent Sassafras soils, 25 percent Croom soils, and 45 percent minor soils. The Beltsville-Leonardtown-Chillum association covers most of the north end of the main installation, extends through the central section the installation to the southern boundary, and also occurs along the eastern boundary of the installation. These soils are predominately gently to moderately sloping, but generally include areas that are nearly level to fairly steep. This association consists mainly of moderately deep, well-drained soils with a compacted subsoil or substratum. This association is composed of about 45 percent Beltsville soils, 13 percent Leonardtown soils, and 42 percent Chillum and other minor soils (AAFB 2001).

The Leonardtown silt loam 0 to 2 percent slopes and Leonardtown silt loam 2 to 5 percent slopes are designated as hydric soils. Hydric soils are soils that are saturated, flooded, or ponded for long enough during the growing season to develop anaerobic (oxygen-deficient) conditions in their upper part. Anaerobic soil conditions are conducive to the establishment of vegetation that is adapted for growth under oxygen-deficient conditions and is typically found in wetlands (hydrophytic vegetation). Locations where these soils occur are also potential locations of wetlands. **Section 3.7.2** provides additional discussion of wetland habitats occurring in the vicinity of the proposed project area.

The majority of soils occurring on the installation no longer exhibit their original characteristics as a result of disturbance associated with development activities that have occurred since the installation was established 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 to 50 percent of the main installation now consists of Udorthents, or land so altered by earth disturbances that the original soil series could not be determined. Approximately 10 percent of the soils on the main installation remain undisturbed. These soils occur mainly around the perimeter of the installation and in parts of the golf course (AAFB 2001).

3.6 Water Resources

3.6.1 Definition of the Resource

Water resources include groundwater, surface water, and floodplains. Evaluation of water resources examines the quantity and quality of the resource and its demand for various purposes.

Groundwater. Groundwater is the subsurface water that fully saturates pores or cracks in soils and rock. It replenishes streams, rivers, and habitats and provides freshwater for irrigation, industry, and potable water consumption. Subsurface water occurs in some proportion at nearly all depths in porous soil and rock, but it is only available for human consumption when the soil or rock is fully saturated; when the pores are fully saturated, the water is then termed “groundwater.”

Surface Water. Surface water resources consist of lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale. Storm water is an important component of surface water systems because of its potential to introduce sediments and other contaminants that could degrade lakes, rivers, and streams. Storm water flows could be exacerbated by high proportions of impervious surfaces associated with buildings, roads, and parking lots. Storm water systems convey precipitation away from developed sites to receiving surface waters.

Appropriately designed storm water management systems employ a variety of devices to slow the movement of water. For instance, a large, sudden flow could scour a streambed and harm biological resources. Storm water systems provide the benefit of reducing sediments and other contaminants that would otherwise flow directly into surface waters. Failure to size storm water systems appropriately to either hold or delay conveyance of the largest predicted precipitation event often leads to flooding and the environmental and economic damages associated with flooding. Higher densities of development, such as those found in urban areas, require greater degrees of storm water management because of the higher proportions of impervious surfaces that occur in urban centers.

The *Maryland Storm Water Management Guidelines for State and Federal Projects* (COMAR 26.17.02) require the development and approval of a storm water management plan for projects that disturb more than 5,000 square feet of land. The purpose of plan implementation is to protect, maintain, and enhance the public health, safety, and general welfare by establishing minimum requirements and procedures to control the adverse impacts associated with increased storm water runoff. The Applicant is responsible for submitting a storm water management plan that meets the design requirements of the guidelines. The plan is required to include sufficient information to evaluate the environmental characteristics of affected areas, the potential impacts of the proposed development on water resources, and the effectiveness and acceptability of measures proposed for managing storm water runoff. The Applicant is required to certify that all clearing, grading, drainage, construction, and development will be conducted in strict accordance with the plan. Storm water runoff from construction sites is also addressed at 40 CFR Part 122, which requires Phase II National Pollutant Discharge Elimination System (NPDES) permits for disturbances between 1 and 5 acres, and Phase I permits for disturbances of more than 5 acres. COMAR 26.17.02 incorporates 40 CFR Part 122 by reference.

Floodplains. Floodplains are areas of low-level ground present along rivers, stream channels, or coastal waters. Such lands might be subject to periodic or infrequent inundation due to rain or melting snow. Risk of flooding typically hinges on local topography, the frequency of precipitation events, and the size of the watershed above the floodplain. Flood potential is evaluated by the Federal Emergency Management Agency (FEMA), which defines the 100-year floodplain. The 100-year floodplain is the area that has a 1 percent chance of inundation by a flood event in a given year. Certain facilities inherently pose too great a risk to be located in either the 100- or 500-year floodplain, such as hospitals, schools, or storage buildings for irreplaceable records. Federal, state, and local regulations often limit floodplain development to passive uses, such as recreational and preservation activities, to reduce the risks to human health and safety.

EO 11988, *Floodplain Management*, requires Federal agencies to determine whether a proposed action would occur within a floodplain and to avoid floodplains unless the agency determines that there is no practicable alternative. Where the only practicable alternative is to site in a floodplain, a specific step-by-step process must be followed to comply with EO 11988 outlined in the FEMA document *Further Advice on EO 11988 Floodplain Management*. As a planning tool, the NEPA process incorporates floodplain management through analysis and public coordination of the EA.

3.6.2 Existing Conditions

Groundwater. Andrews AFB is 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. The upland deposits are typically underlain by the Calvert Formation, consisting of stratified sand, silt, clay, and gravel. Groundwater is generally encountered at depths of less than 20 feet below ground level and probably exists under unconfined water table conditions. Precipitation is the main source of groundwater recharge to the upland deposits. The general direction of groundwater movement is believed to be downgradient toward local streams or downward to underlying aquifers (AAFB 2001).

Four major or regionally significant aquifers underlie the main installation at significant depths. In descending stratigraphic sequence, these include the Aquia, Magothy, Patapsco, and Patuxent formations. The lake supply well (depth of this well is approximately 385 feet) near Base Lake draws water from the Patapsco formation. The Aquia formation, which lies at approximately 150 feet below ground level, is not a major aquifer at Andrews AFB; however, this formation receives recharge in the area northwest of Andrews AFB where the aquifer directly underlies the upland deposits (AAFB 2001).

Surface Water. Andrews AFB and the surrounding area are within three diverse watersheds: the Potomac River, Anacostia River, and Patuxent River. The majority of the installation, including the MFH area, lies within the Potomac River Watershed (AAFB 2001). Surface water bodies on Andrews AFB include several first order streams, Base Lake, and five other small surface impoundments (AAFB 2001).

The MFH area at Andrews AFB is in the Tinkers Creek drainage area. Meetinghouse Branch originates in the northern portion of the MFH area, and flows southwest, and Payne's Branch originates at the golf course and drains west-southwest. Meetinghouse Branch and Payne's Branch join to the west of the installation, and then flow to the southwest into Tinkers Creek. Beaver activity has been reported east of Perimeter Road, which could affect these two streams (AAFB 2005b). Base Lake, a 17-acre recreational impoundment, is east of MFH and in the southern portion of Andrews AFB (in the Piscataway Creek drainage area). Surface water bodies in the MFH area are shown in **Figure 3-2**.

The Belle Chance parcel is in the Henson Creek drainage area. Runoff in the Henson Creek drainage area flows in a general northwest direction off Andrews AFB into Henson Creek. A pond lies south of the Belle Chance lease parcel. This pond is approximately 3 acres and is bisected by a road. A culvert under the road connects the two portions of the pond. The pond does not appear to connect directly to Henson Creek (AAFB 2005b). Refer to **Figure 2-3** for surface water bodies in the vicinity of Belle Chance.

Storm water runoff at Andrews AFB contains pollutants of a typical urban area, including petroleum products, fertilizers, pesticides, and deicing salt (during winter). Seven storm water discharge points or outfalls exist on Andrews AFB. None of the outfalls exceed NPDES benchmarks. Andrews AFB has permits for storm water discharge including Maryland General Discharge Permit No. 02-SW and General Permit No. MDR (AMC 2004). There is no required sampling for the permits, but Andrews AFB conducts semiannual groundwater sampling as a proactive pollution prevention measure. The installation also has an up-to-date SWPPP, which has been reviewed by MDE. The permits and SWPPP are for industrial purposes; they do not cover the storm water runoff of the MFH property. The storm water system for the housing neighborhoods is designed for natural runoff into the storm drains and into the surrounding surface waters.

Floodplains. EO 11988 discourages Federal agencies from constructing in the 100-year floodplain unless the decisionmaker concludes there is no practicable alternative. On Andrews AFB, floodplains are essentially limited to the actual stream bottoms and minor low-lying terraces situated immediately adjacent. There are two 100-year floodplains mapped on the installation: one east of Base Lake along the installation boundary, and the other along Meetinghouse Branch on the western installation boundary. **Figure 3-2** shows the location of the 100-year floodplain associated with Meetinghouse Branch. There are no 100-year floodplain areas near Belle Chance. Meetinghouse Branch has upstream riparian buffers, which help to control natural runoff and reduce the potential for adverse flood conditions (AAFB 2001).

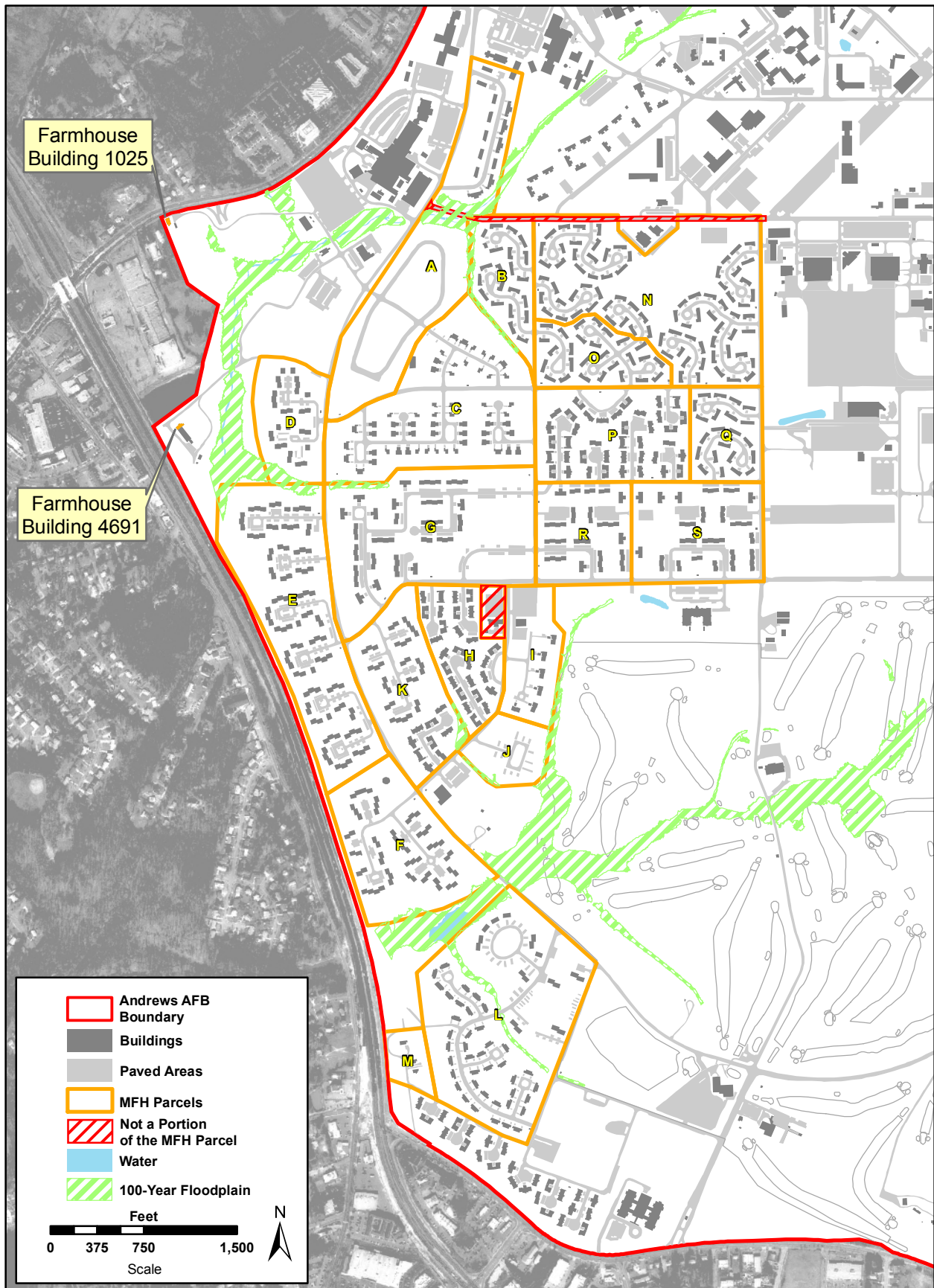


Figure 3-2. Water Resources in the Vicinity of MFH and Farmhouse Parcels

3.7 Biological Resources

3.7.1 Definition of the Resource

Biological resources include native or naturalized plants and animals, and the habitats, such as wetlands, forests, and grasslands, in which they exist. Sensitive and protected biological resources include plant and animal species listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) or a state.

Under the Endangered Species Act (ESA) (16 U.S.C. 1536), an “endangered species” is defined as any species in danger of extinction throughout all or a large portion of its range. A “threatened species” is defined as any species likely to become an endangered species in the foreseeable future. The USFWS also maintains a list of species considered to be candidates for possible listing under the ESA. Although candidate species receive no statutory protection under the ESA, the USFWS has attempted to advise government agencies, industry, and the public that these species are at risk and might warrant protection under the ESA.

The Maryland Nongame and Endangered Species Conservation Act and regulations (Maryland Annotated Code §§10-2A-01–09) protects state-listed endangered and threatened species of plants and animals in Maryland. The official State Threatened and Endangered Species List is prepared as part of the State Threatened and Endangered Species regulations. Species are listed based on the best scientific and commercial data available. Recovery plans are required, although no time frame is established. Critical habitat designation and agency consultation are not required.

Wetlands are an important natural system and habitat because of the diverse biologic and hydrologic functions they perform. These functions include water quality improvement, groundwater recharge and discharge, pollution mitigation, nutrient cycling, wildlife habitat provision, and erosion protection. Wetlands are protected as a subset of “the waters of the United States” under Section 404 of the CWA. The term “waters of the United States” has a broad meaning under the CWA and incorporates deepwater aquatic habitats and special aquatic habitats (including wetlands). The U.S. Army Corps of Engineers (USACE) defines wetlands as “those areas that are inundated or saturated with ground or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (33 CFR Part 328).

The USACE is responsible for making jurisdictional determinations and regulating wetlands under Section 404 of the CWA. The USACE also makes jurisdictional determinations under Section 10 of the Rivers and Harbors Act of 1899. The NRCS has developed procedures for identifying wetlands for compliance with the Food Security Act of 1985, and the National Wetlands Inventory has developed a classification system for identifying wetlands. Through the National Wetlands Inventory, the USFWS is the principal Federal agency that provides information to the public on the extent and status of wetlands.

EO 11990, *Protection of Wetlands*, requires that Federal agencies provide leadership and take actions to minimize or avoid the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland, and the proposed construction incorporates all possible measures to limit harm to the wetland.

3.7.2 Existing Conditions

AFI 32-7064, *Integrated Natural Resources Management*, implements AFD 32-70, *Environmental Quality*, and DOD Directive 4700.4, *Natural Resources Management*. AFI 32-7064 explains how to manage natural resources on USAF property. The Integrated Natural Resources Management Plan (INRMP) is a key tool for managing the installation's natural resources.

Vegetation. A significant portion of Prince George's County has been deforested for urban and suburban development, particularly in the vicinity of the District of Columbia. Therefore, relatively small remnants of woodland communities are present in these urbanized areas. Somewhat more extensive forests occur outside the District of Columbia, primarily along steeper valley slopes, poorly drained (wetland) areas, floodplains, and public lands. Typical forest species in the remaining woodlands at or near Andrews AFB include chestnut oak (*Quercus prinus*), white oak (*Q. alba*), black oak (*Q. velutina*), northern red oak (*Q. rubra*), southern red oak (*Q. falcata*), sugar maple (*Acer saccharum*), red maple (*A. rubrum*), loblolly pine (*Pinus taeda*), Virginia pine (*P. virginiana*), mockernut hickory (*Carya tomentosa*), black gum (*Nyssa biflora*), sweetgum (*Liquidambar styraciflua*), American beech (*Fagus grandifolia*), yellow poplar (*Liriodendron tulipifera*), hackberry (*Celtis occidentalis*), and American holly (*Ilex opaca*). Mountain laurel (*Kalmia latifolia*), highbush blueberry (*Vaccinium corymbosum*), and Christmas fern (*Polystichium acrostichoides*) are common in the understory (AAFB 2001).

Vegetation communities at Andrews AFB consist of intensively managed landscape areas (improved areas) and other unmanaged patches of natural plant communities. Nearly 80 percent of the main installation is developed or intensely managed (improved or semi-improved). The intensely managed areas include lawns, gardens, golf course fairways, ponds, bare ground, and recreational fields. Some other areas on Andrews AFB contain patches of nonindigenous, invasive plants such as Japanese honeysuckle (*Lonicera japonica*), English ivy (*Hedera helix*), wintercreeper (*Euonymus fortunei*), privet (*Ligustrum* spp.), periwinkle (*Vinca minor*), wineberry (*Rubus phoenicolasius*), tree-of-heaven (*Ailanthus altissima*), oriental bittersweet (*Celastrus orbiculatus*), autumn olive (*Elaeagnus umbellata*), Russian olive (*E. angustifolia*), beggar-ticks (*Bidens polylepis*), purple loosestrife (*Lythrum salicaria*), Korean lespedeza (*Lespedeza cuneata*), common reed (*Phragmites australis*), and multiflora rose (*Rosa multiflora*) (AAFB 2001).

Approximately 720 acres of forestland occur on the main installation. These forested areas are scattered around the perimeter and southern portion of the main installation. The forest classifications include modified commercial forestland, noncommercial forestland, and restricted commercial forestland. Approximately 222 acres of modified commercial forestland occur in scattered stands on the east side of the main installation. Approximately 34 acres of noncommercial forestland occur in the housing areas and golf courses. Approximately 152 acres of restricted commercial forestland occur in riparian zones (AAFB 2001).

Most turf and landscape areas occur in the improved and semi-improved portions of the main installation. These areas include the airfield, golf course, surrounding structures in the cantonment area and MFH, and along major roadways. Dominant turf species are Kentucky 31 fescue (*Festuca elatior*) and perennial ryegrass (*Lolium perenne*). Mowing is performed as needed to maintain the grass between heights of 2.5 inches to 4 inches in improved areas. In semi-improved areas, except the airfield, the grass is maintained at a height between 2.5 inches and 8 inches. On the airfield, grass height is maintained between 7 inches and 14 inches. Generally, the turf grasses are hardy. Fertilizer and herbicide are applied infrequently, mostly to the lawn in front of the wing headquarters building. Herbicides are applied as needed to airfield pavement cracks (AAFB 2001).

All of MFH is classified as an improved area. The remaining unimproved areas, which border the MFH, contain ecological communities, such as mixed hardwood forests, mixed hardwood/pine forests, oak

forests, oak/hickory forests, oak/pine forests, pine forests, red maple swamp, and shallow emergent marsh. The Belle Chance parcel and surrounding area consists of mostly mowed and maintained lawn and grounds areas surrounded by some stands of mixed hardwoods, including black walnut (*Juglans nigra*) and white oak, with some areas of dense understory (AAFB 2001). Mowed lawn typically extends to the edge of the pond south of Belle Chance, except where small fringes of emergent or scrub-shrub wetlands occur along the edge of the pond.

Wildlife. The rare species survey conducted by Davis (Davis 1994) included limited sampling of animal species at Andrews AFB. Although a total inventory was not performed, the study identified 84 species of birds in a variety of ecological communities including open water, red maple swamp, mixed hardwood forest, old field successional communities, mowed field, and mowed grass. Birds associated with open water communities included Canada geese (*Branta canadensis*), green heron (*Butorides virescens*), great blue heron (*Ardea herodias*), and mallard (*Anas platyrhynchos*). Birds associated with mixed hardwood forests included eastern wood pewee (*Contopus virens*), rufous-sided towhee (*Pipilo erythrophthalmus*), and red-eyed vireo (*Vireo olivaceus*). Birds associated with red maple swamp included prothonotary warbler (*Protonotaria citrea*) and black and white warbler (*Mniotilta varia*). Birds associated with mowed grass included Carolina chickadee (*Poecile carolinensis*), Carolina wren (*Thryothorus ludovicianus*), common crow (*Corvus brachyrhynchos*), and house finch (*Carpodacus mexicanus*) (AAFB 2001).

Birds associated with old field successional and mowed field habitats included eastern meadowlark (*Sturnella magna*), eastern bluebird (*Sialia sialis*), and grasshopper sparrow (*Ammodramus savannarum*). Identified raptors included great horned owl (*Bubo virginianus*), eastern screech owl (*Otus asio*), American kestrel (*Falco sparverius*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), and bald eagle (*Haliaeetus leucocephalus*) (AAFB 2001).

To date, there have been no complete surveys of mammals, reptiles, or amphibians at Andrews AFB. Small mammal species likely to occur on the installation include southeastern shrew (*Sorex longirostris*), least shrew (*Cryptotis parva*), short-tailed shrew (*Blarina brevicauda*), whitefooted mouse (*Peromyscus leucopus*), and meadow vole (*Microtus pennsylvanicus*). Other mammals known to occur at Andrews AFB are white-tailed deer (*Odocoileus virginianus*), American beaver (*Castor canadensis*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis marsupialis*), eastern gray squirrel (*Sciurus carolinensis*), eastern cottontail (*Sylvilagus floridanus*), and various species of bats and small mammals (AAFB 2001).

Reptiles typically found in this region include copperhead (*Agkistrodon contortrix*), rough green snake (*Opheodrys aestivus*), black rat snake (*Elaphe obsoleta obsoleta*), prairie kingsnake (*Lampropeltis calligaster*), mole kingsnake (*Lampropeltis calligaster rhombomaculata*), common kingsnake (*Lampropeltis getula*), eastern kingsnake (*Lampropeltis getula getula*), scarlet kingsnake (*Lampropeltis triangulum elapsoides*), common garter snake (*Thamnophis sirtalis*), and fence lizard (*Sceloporus undulatus*). Amphibians typical to this region include slimy salamander (*Plethodon glutinosus*), longtail salamander (*Eurycea longicauda*), spotted salamander (*Ambystoma maculatum*), bullfrog (*Rana catesbeiana*), green frog (*Rana clamitans*), and American toad (*Bufo americanus*) (Bailey 1995).

Fishing is essentially limited to Base Lake. Fish species in the lake include largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieu*), common carp (*Cyprinus carpio*), bluegill (*Lepomis macrochirus*), and catfish species (*Ictalurus* sp.) (AAFB 2001). Aquatic habitats associated with the ponds and unnamed tributary near Belle Chance are degraded and support common fish and invertebrate species (AAFB 2001, 2005b).

Wildlife use of the Belle Chance parcel and the rest of the installation is limited to locally common species that are habituated to urban landscapes. The MFH and the area which surrounds it are suitable for

common mammals which are seen in the area, such as the gray squirrel, cottontail rabbit, fox, opossum, raccoon, skunk, and deer.

Nuisance Wildlife. There are occasional requests made by MFH residents for removal of rats, snakes (black rat and common garter), bats, Virginia opossums, and raccoons. Captured animals are relocated to an appropriate habitat at remote sites (AAFB 2001).

Threatened and Endangered Species. An installation's overall ecosystem management strategy must provide for protection and recovery of threatened and endangered species. As a policy, USAF gives the same protection, when practical, to any state-listed threatened, endangered, or other rare species. Surveys for rare and protected species of plants and animals were performed in 1993 (Davis 1994), 1996 and 1997 (AAFB 1998), and 2004 (AAFB 2005c). In 1993, sandplain gerardia (*Agalinis acuta*), a federally listed and state-listed endangered plant species, was documented. In 1996–1997, bald eagle (*Haliaeetus leucocephalus*), a federally threatened and state-threatened species, was documented. Other rare or state-listed plant species were identified in either the 1993 or 1996–1997 surveys. The most recent survey in 2004 identified only one rare or federally or state-protected species, the ten-lobed agalinis (*Agalinis obtusifolia*). Threatened and endangered and rare species that have been documented on the main installation are listed in **Table 3-4**.

Table 3-4. Threatened and Endangered and Rare Species that Have Been Observed on Andrews AFB

Scientific Name	Common Name	Federal Status	State Status/ Rank ^a	Year(s) Observed
Fauna				
<i>Haliaeetus leucocephalus</i>	Bald eagle	Threatened	Threatened	1996–1997
Flora				
<i>Agalinis acuta</i>	Sandplain gerardia	Endangered	Endangered	1993 ^b
<i>Agalinis obtusifolia</i>	Ten-lobed agalinis or Blunt-leaved gerardia	--	Endangered	1993, 2004
<i>Alopecurus carolinianus</i>	Carolina foxtail	--	Highly Rare in State	1993, 1996– 1997
<i>Aristida curtissii</i>	Curtiss' three-awn	--	Possibly Rare	1993, 1996– 1997
<i>Potamogeton spirillus</i>	Spiral pondweed	--	Highly Rare in State	1993
<i>Scleria triglomerata</i>	Tall nutrush	--	Rare to Highly Rare in State	1993
<i>Utricularia inflata</i>	Swollen bladderwort	--	State Watchlist Species	1993, 1996– 1997

Source: AAFB 2001, AAFB 2005c

Notes:

^a State Status refers to species that have been designated as Endangered or Threatened or are on the State Watch List under Maryland threatened and endangered species regulations. State Ranks refers to those species that have been identified as rare but are otherwise not protected under any laws or regulations.

^b Sandplain gerardia was not observed in the 2004 survey; however, it was documented in the survey that this species is commonly seen by installation personnel in August during its flowering season.

Critical habitat is defined as the geographic area that contains physical or biological features essential to the conservation of a federally listed species or an area that might require special management considerations or protection. The protection and management of the areas containing these species are coordinated through the INRMP. A specific management action plan for the sandplain gerardia was developed in 2005 (AAFB 2005c), but this area is well outside the MFH, farmhouse, and Belle Chance parcels. Andrews AFB lacks suitable perch trees and is subject to frequent human disturbance; therefore, bald eagles are not expected on the installation, except for occasional transient individuals.

No listed species have been documented near the 18 MFH parcels in the western section of the main installation. Potential habitat for the swollen bladderwort (on the state watch list) occurs in a small area near the southwest corner of the Belle Chance parcel (see **Figure 3-3**). Swollen bladderwort is an aquatic, carnivorous plant found in shallow pools and wetland habitats. It has been observed in the western branch of the pond south of Belle Chance in 1993 and 1996–1997, but it was not observed in the most recent survey (AAFB 2005c).

Non-Federal contractors are required to obtain a depredation permit from the USFWS before removing or disturbing nesting birds. The occurrence of migratory birds is the highest during the fall and lasting through the spring because of the location of Andrews AFB in the Atlantic Flyway (AAFB 2001).

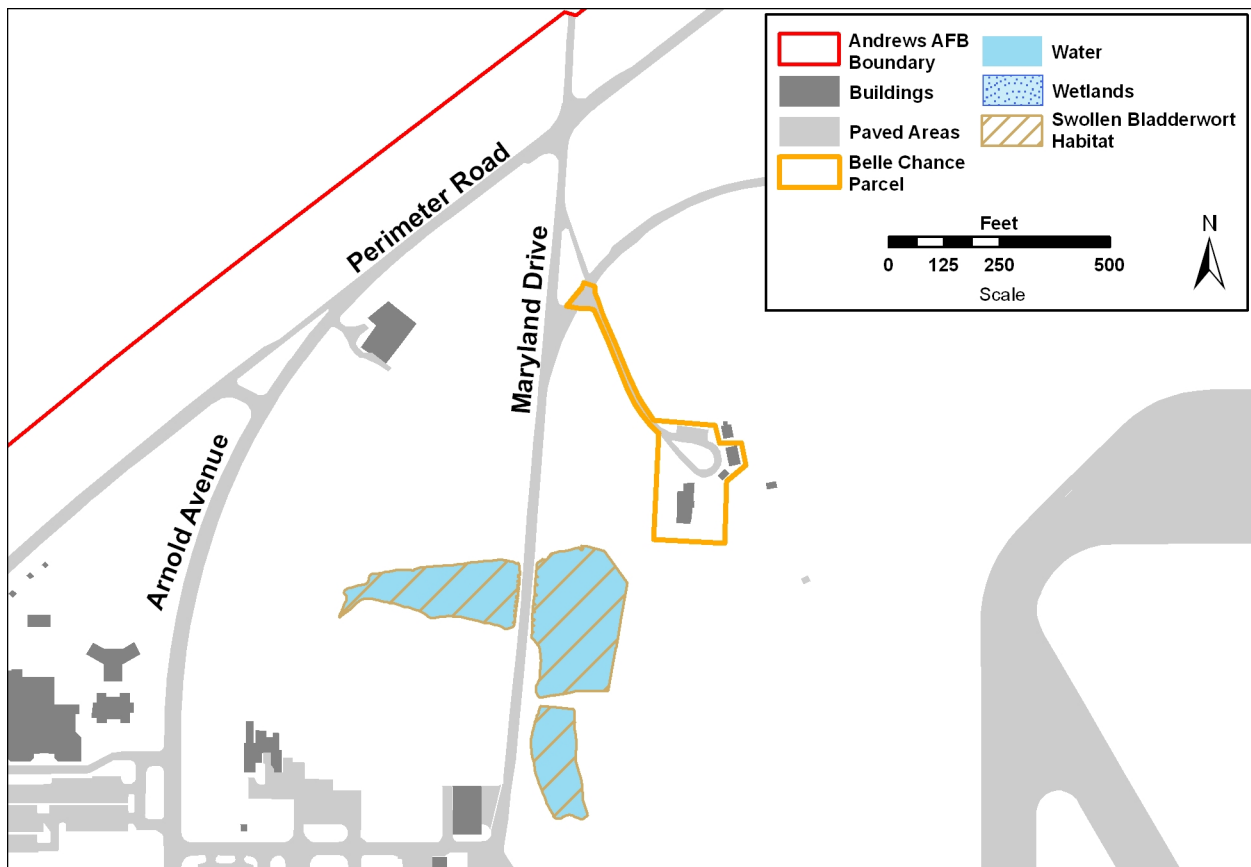


Figure 3-3. Sensitive Species Habitat and Wetlands Near the Belle Chance Parcel

Wetlands. A wetland survey for Andrews AFB conducted in 2003 delineated 87.2 acres of jurisdictional wetlands. Five different types of wetlands were identified on the installation, located in areas adjacent to stream channels, in drainage ditches, and along the fringes of ponds and lakes (AMC 2004). **Table 3-5** identifies the different wetland types and their acreages on Andrews AFB.

There are wetlands bordering the southern MFH area, specifically along the western side of the MFH area. Wetlands border and dissect the western edge, but do not intrude into the housing communities. Wetlands at the Belle Chance parcel are limited to the wetlands associated with the ponds and streams. The wetlands nearest the Belle Chance structures are adjacent to the tributary below the pond to the south of the parcel, approximately 200 feet away from the main residence. **Figure 3-4** depicts the location of wetlands surrounding the southern MFH area. **Figure 3-3** shows the wetlands and sensitive species locations and their habitats at Andrews AFB around the Belle Chance parcel.

Given the upland Coastal Plain setting, wetland areas on the installation are relatively limited. Generally, wetlands are restricted to the small stream courses and minor areas of attendant floodplains. The largest concentration of wetlands is associated with Piscataway Creek south of the airfield.

Table 3-5. Wetland Community Types on Andrews AFB, Maryland

Wetland Community Type	Acreage
Palustrine Forested Wetland	35.967
Palustrine Scrub/Shrub Wetland	8.674
Palustrine Emergent Wetland	30.575
Palustrine Unconsolidated Bottom Excavated Pond	3.614
Palustrine Unconsolidated Bottom Pond with Beaver Activity	1.328
Total	87.158

Source: AMC 2004

3.8 Cultural Resources

3.8.1 Definition of the Resource

Cultural resources include archeological sites, structures, districts, or any other physical evidence of human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or any other reason. Depending on their condition and historic use, such resources can provide insight into living conditions of previous civilizations, or might retain cultural and religious significance to modern groups. Typically, cultural resources are subdivided into the following:

- *Archeological resources*, which comprise areas where human activity has measurably altered the earth or deposits of physical remains are found (e.g., projectile points and bottles).
- *Architectural resources*, which include standing buildings, bridges, dams, and other structures of historic or aesthetic significance. Generally, architectural resources must be more than 50 years old to be considered eligible for the NRHP. More recent structures, such as Cold War-era resources, might be eligible for the NRHP if they are considered to be of exceptional importance and have the potential to gain significance in the future. Historic districts have a significant concentration, linkage, or continuity of historic sites, buildings, structures, or objects united historically or aesthetically.

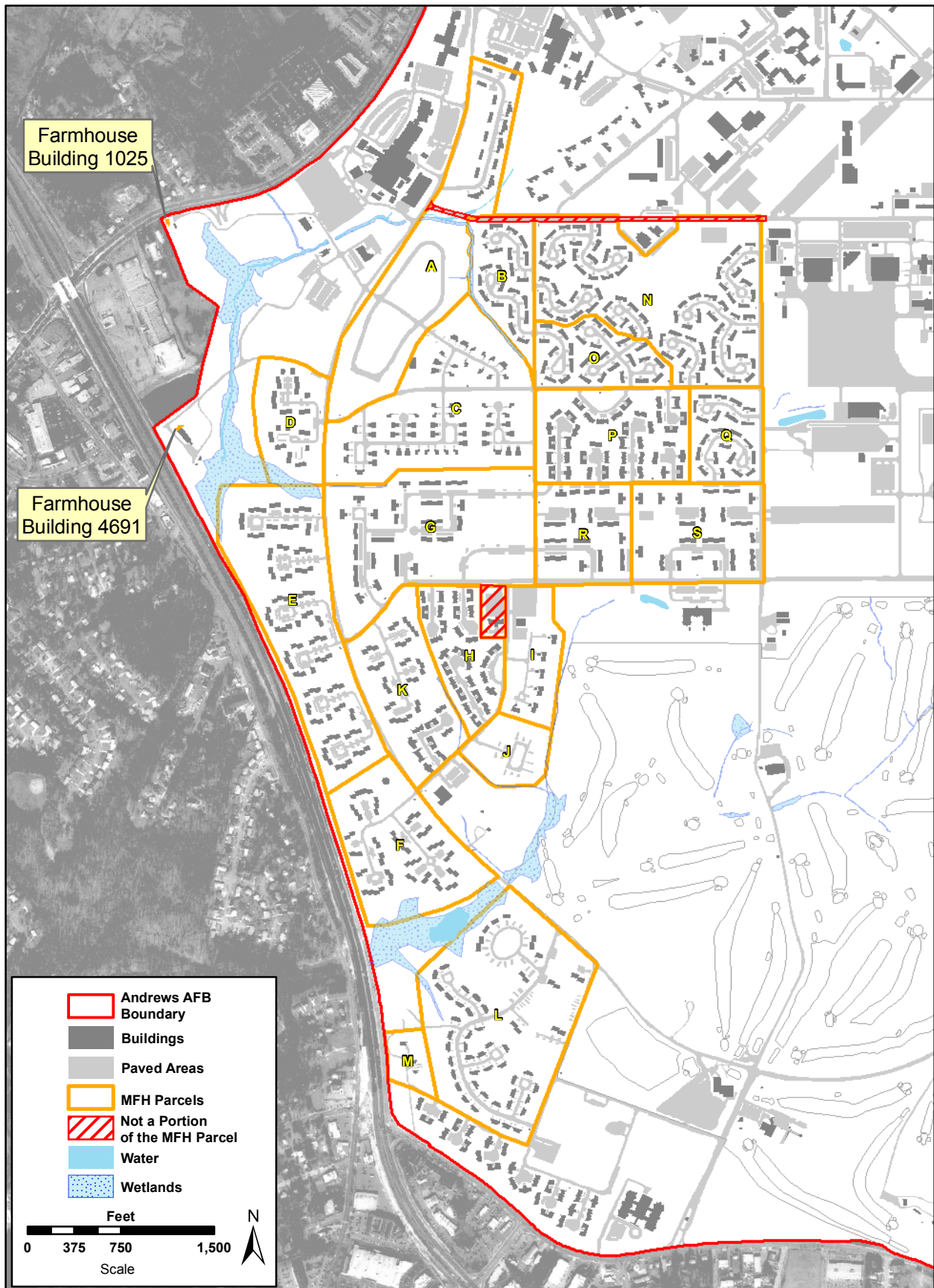


Figure 3-4. Wetlands in the Vicinity of MFH and Farmhouse Parcels

- *Traditional cultural properties (TCP)*, which are resources eligible for inclusion in the NRHP because of their association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community. TCPs can include archeological resources, structures, neighborhoods, prominent topographic features, habitats, plants, animals, and minerals that communities consider essential for the preservation of traditional culture.

Several Federal laws and regulations govern protection of cultural resources, including the NHPA (1966), the Archeological and Historic Preservation Act (1974), the American Indian Religious Freedom Act (1978), the Archeological Resources Protection Act (ARPA) (1979), and the Native American Graves Protection and Repatriation Act (NAGPRA) (1990).

The NHPA applies to "historic properties" defined as prehistoric and historic sites, structures, districts, objects, or any other physical evidence of human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or any other reason. Depending on the condition and prehistoric or historic use, such resources might provide insight into lifestyles and living conditions in previous civilizations or might retain cultural and religious significance to modern groups. The NHPA includes a number of directives to Federal agencies, the primary of which are subsumed under Section 106 (16 U.S.C. 470f). Section 106 of the NHPA states:

The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation...a reasonable opportunity to comment with regard to such undertaking.

In short, Section 106, as codified under 36 CFR Part 800, requires Federal agencies to consider the effects of their undertakings on historic properties prior to implementation. The Section 106 process is designed to identify possible conflicts between historic preservation objectives and the proposed activity, and to resolve those conflicts in the public interest through consultation.

An undertaking, as defined in Section 301(7) of the NHPA, includes any "project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including (a) those carried out by or on behalf of the agency; (b) those carried out with Federal financial assistance; (c) those requiring a Federal permit, license, or approval; and (d) those subject to State or local regulation administered pursuant to a delegation or approval by a Federal agency" (16 U.S.C. 470w[7]). As virtually every action taken by a Federal agency constitutes an undertaking under this definition, the regulations state that an undertaking does not have to be reviewed unless it is the "type of activity that has the potential to cause effects on historic properties" (36 CFR 800.3[a]). In general, undertakings that have the potential to affect historic properties are those that involve modifications to land or structures, including construction, grading, excavation, maintenance, rehabilitation, renovation, and the sale or lease of a historic property.

The NAGPRA places affirmative duties on Federal agencies to protect, inventory, and rightfully dispose of Native American cultural items, both those in existing collections and those that might be discovered in the future. Under NAGPRA, AMC must consult with appropriate American Indian tribes prior to authorizing the intentional removal of Native human remains and funerary objects found with them.

AMC must prepare documentation to show that consultation pursuant to Section 3(c) of NAGPRA has occurred and this must be included and maintained in the decision record. A cultural resource use permit or equivalent documentation is generally required before human remains and artifacts covered by NAGPRA can be excavated or removed from Federal lands. Permit-related notification and consultation, if requested, are required by ARPA Section 4 and 43 CFR 7.7. Consultation for NAGPRA purposes must occur before the excavation or removal of human remains and cultural items can be authorized. Human remains or cultural items subject to NAGPRA discovered as a result of an AMC or AMC-authorized activity, such as the construction of new MFH discussed in this EA, are to be handled in the manner described in the “inadvertent discovery” procedures found at Section 3(d) of NAGPRA. Where there is a reasonable likelihood of encountering undetected cultural items during a proposed land use, agreements should be negotiated with tribes or groups before the project is authorized to provide general guidance on treatment of any cultural items that might be exposed.

The EA process and the consultation process prescribed in Section 106 of the NHPA require an assessment of the potential impact of an undertaking on historic properties that are within the proposed project’s Area of Potential Effect (APE), which is defined as the geographic area(s) “within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist.”

3.8.2 Existing Conditions

Archeological Resources. Information from the 2003 Integrated Cultural Resources Management Plan (ICRMP) for Andrews AFB indicates that several archeological studies have been conducted in the vicinity of the installation, including several on the installation and on the installation’s discontinuous properties (AAFB 2003b). Surveys and evaluation studies of archeological resources within Andrews AFB are summarized in **Table 3-6**.

Table 3-6. Archeological Investigations Conducted on Andrews AFB

Year	Author	Study Type	Results
n.d.	Amateur surveys	Site files at the Trust	Identified three sites at the Davidsonville Transmitter Station (a discontinuous portion of Andrews AFB, not discussed in detail in this EA).
1984	Harrel and Montagliani	Overview	No prehistoric sites noted.
1993	NPS	Assessment	Recommended three areas for testing. Considers most of the installation heavily disturbed.
1995	Argonne National Laboratory	Intensive Survey	Identified five prehistoric sites at the Davidsonville Transmitter Station; three are potentially NRHP-eligible. Identified two multicomponent sites on Andrews AFB; both are potentially NRHP-eligible.
1999	Bienenfeld and Leininger	Phase II Survey and Testing	Tested nine sites: six at Andrews AFB and three at the Davidsonville Transmitter Station. Recommended the three Davidsonville sites and the historic component of one of the Andrews AFB sites as eligible for the NRHP. One of the three Davidsonville sites also has an historic component which is NRHP-eligible.

Source: Adapted from Table 2.4 of AAFB 2003b

In 1993, the installation began an effort to identify and evaluate its cultural resources as required under Section 110 of the NHPA. Between 1993 and 1999, the installation contracted inventories of the majority of its acreage. These inventories recorded six archeological sites on the main portion of the installation (see **Table 3-7**). The prehistoric component of Site 18PR447 (Belle Chance) was determined not eligible for listing in the NRHP, but the historic component of the site is eligible for listing in the NRHP under Criterion D (i.e., yielding, or likely to yield, information important to prehistory or history) (AAFB 2003b). The other five sites were determined ineligible for listing in the NRHP.

Table 3-7. Archeological Sites on Andrews AFB

Site Number	Site Type	Temporal Component(s)	NRHP Eligibility
18PR443	Rural School	Late 19th, Early 20th Century	Ineligible
18PR444	Rural Domestic	Late 19th, Early 20th Century	Ineligible
18PR445	Unknown; Parsonage	Prehistoric; Late 19th, 20th Century	Ineligible
18PR446	Rural Domestic	Late 19th, 20th Century	Ineligible
18PR447 ^a	Farm House	Late 18th through Early 19th Century	Eligible
18PR448	Rural Outbuilding	20th Century	Ineligible

Sources: AMC 1995; Bienenfeld and Leininger 1999

Note: ^a The prehistoric component of Site 18PR447 is not eligible for the NRHP.

Architectural Resources. As noted in the ICRMP (AAFB 2003b), two basic building types are found at Andrews AFB: nonmilitary housing units that pre-date construction of the installation in 1942 and utilitarian military-built structures. These buildings comprise a variety of construction methods and architectural styles. Building materials and associated construction methods range from wood frame to poured-in-place concrete structures to complex metal assemblies. The Andrews AFB material/construction inventory includes

- Wood-frame structures
- Poured-in-place reinforced concrete
- Metal-frame structures with steel truss work and sheathed in corrugated metal
- Brick.

The following summary of historic properties surveys conducted on Andrews AFB is taken from the ICRMP (AAFB 2003b). **Table 3-8** provides a summary of the historic properties surveys discussed in text.

The previous surveys conducted on Andrews AFB identified several potentially NRHP-eligible historical and Cold War-era resources. Andrews AFB prepared NRHP nomination forms for the three buildings comprising Belle Chance (Buildings 1966, 1967, and 1968) in 1994, along with Chapel II; however, the Trust did not concur with the nomination form because Chapel II lacks integrity, and they wanted more information about Belle Chance. The installation did not revise the forms or send them to the Keeper of the Register. The installation no longer considers Chapel II eligible for the NRHP because it has been substantially rebuilt. Andrews AFB considers Belle Chance to be eligible under Criterion C. Belle Chance and Chapel II (Building 3715) are listed on the Prince George's County Register of Historic Places. **Table 3-9** indicates the NRHP-eligible properties on Andrews AFB.

Table 3-8. Historic Architectural Investigations Conducted on Andrews AFB

Year	Author	Study Type	Results
1993	NPS	Cultural Resources Report and Management Recommendations for Andrews AFB, Prince George's County	Assessed all historic resources on the installation. Recommended Belle Chance and Chapel II potentially eligible for the NRHP.
1994	John Cullinane and Associates	Inventory and Evaluation of Historic Resources	Inventoried and evaluated all pre-1947 buildings and structures.
1995	Argonne National Laboratory	An Archeological and Historic Resources Inventory at Andrews AFB, Maryland	Belle Chance and Chapel II were identified, but not evaluated in this report.
1995	Geo-Marine	Andrews AFB, Camp Springs, Maryland—Inventory of Cold War Properties	Inventoried and evaluated all Cold War properties.
1996	NPS	USAF Cultural Resources Servicewide Overview Project: Andrews AFB	Assessed historical properties inventory and compliance efforts for Andrews AFB.
2002	Parsons	Inventory of Selected Cold War Properties, Andrews AFB	Inventoried and evaluated selected Cold War properties using Trust survey forms.

Source: Adapted from Table 2.6 of AAFB 2003b

Table 3-9. NRHP-Eligible Buildings on Andrews AFB

Building No.	Building Name	Year Built	Source
1966	Belle Chance, Family Housing	1912	Harrel and Montagliani 1984; NPS 1993; JCA 1994; Trust 2000
1967	Belle Chance, Storage Shed	1912	JCA 1994; Trust 2000
1968	Belle Chance, Garage	1912	JCA 1994; Trust 2000

Belle Chance is a hipped-roof concrete dwelling that stands in a grove of trees on landscaped grounds at Andrews AFB. Its concrete structure and Colonial Revival styling with Spanish influences distinguish it. There are some contemporary outbuildings northeast of the house. Approximately 100 yards southeast of the house is the nineteenth-century Darcey family cemetery. Across from the main residence is a one-and-one-half-story hipped-roof, poured-in-place concrete garage. South of the garage is a one-story, gable-roof storage shed with slightly flared overhanging eaves. The buildings front onto a circular driveway, which approaches the house from the north.

Belle Chance is an unusual example of a concrete mansion designed in the Colonial Revival style. The land on which the house stands was part of a tract known as “Chance,” the early nineteenth-century farm of Edward Darcey. The property was sold in 1902 to Dr. William W. Stewart, who practiced dentistry and law in Washington, D.C. The old Darcey dwelling burned to the ground in 1910, and Dr. Stewart replaced it in 1912 with an all-concrete structure, a practice that was then gaining favor as a way of avoiding loss by fire. During World War II, the U.S. government began construction of the air

installation. All of Dr. Stewart's estate was acquired by the U.S. government and used as the residence of the installation commander of Andrews AFB.

In 1994, all pre-1947 structures on Andrews AFB were inventoried under Section 110 of the NHPA. After preparation of the nomination forms and review by the Maryland Historical Trust, only the three Belle Chance buildings described previously were identified to be eligible for the NRHP. The investigation concluded that the remaining pre-Andrews AFB structures, along with the remaining pre-1947 buildings, do not meet the necessary NRHP criteria for eligibility. In 1995, a Cold War properties inventory was performed. Only one hangar, Building 3032, was considered potentially eligible for the NRHP under Criterion C and Criteria Consideration G; however, the Trust later expressed the opinion that the building was not eligible for the NRHP because it appeared to lack exceptional significance and its integrity had been compromised (MHT 1997). In 2002, 4 housing districts and 16 individual buildings were evaluated for potential historical or Cold War-era significance. None of the resources studied were recommended as eligible for listing in the NRHP. The Trust concurred with these recommendations in March 2003 (MHT 2003).

Traditional Cultural Properties

There are no federally recognized Indian tribes resident in Maryland. The descendants of the area's early seventeenth-century Algonquian speaking American Indian residents are not federally recognized. The closest federally recognized tribe that might have an interest in the area of Andrews AFB are the Oneida Nation of New York and the Oneida Tribe of Wisconsin. This association comes from the Susquehannock who moved into the area of Washington, D.C. during the late seventeenth century and subsequently lived with the Oneida Tribe.

As of FY 2002, Andrews AFB had not consulted with any federally recognized Indian tribes. Archeological surveys have not identified Native American graves, or other culturally sensitive areas on Andrews AFB. If future activity identifies unanticipated Native American human remains, funerary objects, sacred objects, or objects of cultural patrimony on Andrews AFB, the Cultural Resources Manager will contact the Maryland Commission on Indian Affairs and the NPS to determine the appropriate Native American groups to consult.

No other TCPs have been identified within Andrews AFB; however, the installation has not commissioned a survey specifically to identify this category of resource, nor has it consulted with interested parties (e.g., African-American communities, military families that previously occupied the housing) to identify resources of potential concern.

3.9 Socioeconomics and Environmental Justice

3.9.1 Definition of the Resource

Socioeconomics is defined as the basic attributes and resources associated with the human environment, particularly characteristics of population and economic activity. Regional birth and death rates and immigration and emigration affect population levels. Economic activity typically encompasses employment, personal income, and industrial or commercial growth. Changes in these two fundamental socioeconomic indicators are typically accompanied by changes in other components, such as housing availability and the provision of public services. Socioeconomic data at county, state, and national levels permit characterization of baseline conditions in the context of regional, state, and national trends.

Data in three areas provide key insights into socioeconomic conditions that might be affected by a proposed action. Data on employment identify gross numbers of employees, employment by industry or

trade, and unemployment trends. Data on personal income in a region can be used to compare the “before” and “after” effects of any jobs created or lost as a result of a proposed action. Data on industrial or commercial growth or growth in other sectors provide baseline and trend line information about the economic health of a region.

In appropriate cases, data on an installation’s expenditures in the regional economy help to identify the relative importance of an installation in terms of its purchasing power and jobs base.

Demographics identify the population levels and changes to population levels of a region. Demographics data might also be obtained to identify, as appropriate to evaluation of a proposed action, a region’s characteristics in terms of race, ethnicity, poverty status, educational attainment level, and other broad indicators.

Socioeconomic data shown in this chapter are presented at metropolitan, county, and state levels to characterize baseline socioeconomic conditions in the context of regional and state trends. Data have been collected from previously published documents issued by Federal, state, and local agencies; from state and national databases (e.g., U.S. Bureau of Economic Analysis’ Regional Economic Information System).

There are no Federal regulations on socioeconomics, but there is one EO that pertains to environmental justice issues. This EO is included in the environmental justice section because it relates to various socioeconomic groups and the health effects that could be imposed on them. On February 11, 1994, President Clinton issued EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. This EO requires that Federal agencies’ actions substantially affecting human health or the environment do not exclude persons, deny persons benefits, or subject persons to discrimination because of their race, color, or national origin. The EO was created to ensure 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 groups of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of Federal, state, tribal, and local programs and policies. Consideration of environmental justice concerns includes race, ethnicity, and the poverty status of populations in the vicinity of a proposed action. Such information aids in evaluating whether a proposed action would render vulnerable any of the groups targeted for protection in the EO.

3.9.2 Existing Conditions

Prince George’s County is in eastern Maryland and encompasses approximately 500 square miles (PGC 2006). The population in Prince George’s County increased from 729,268 in 1990 to 801,515 in 2000 at a 9.9 percent annual growth rate (U.S. Census Bureau 1990, 2000). This is compared to the 10.8 percent statewide increase and a 13.2 percent nationwide increase in population between the same years. As of 2005, the on-installation population at Andrews AFB was 8,769 (USAF 2006).

For this Proposed Action, the socioeconomic baseline is presented using three levels of comparison: the Region of Influence (ROI) around Andrews AFB; Prince George’s County; and the state of Maryland. The ROI was defined by identifying census tracts surrounding Andrews AFB. Andrews AFB lies in Census Tract 8011.04 and borders tracts 8007.01, 8007.02, 8012.03, 8012.04, 8012.05, 8019.04, and 8022.01. **Figure 3-5** shows the extent of the ROI, which for the purposes of this EA comprises these eight census tracts.

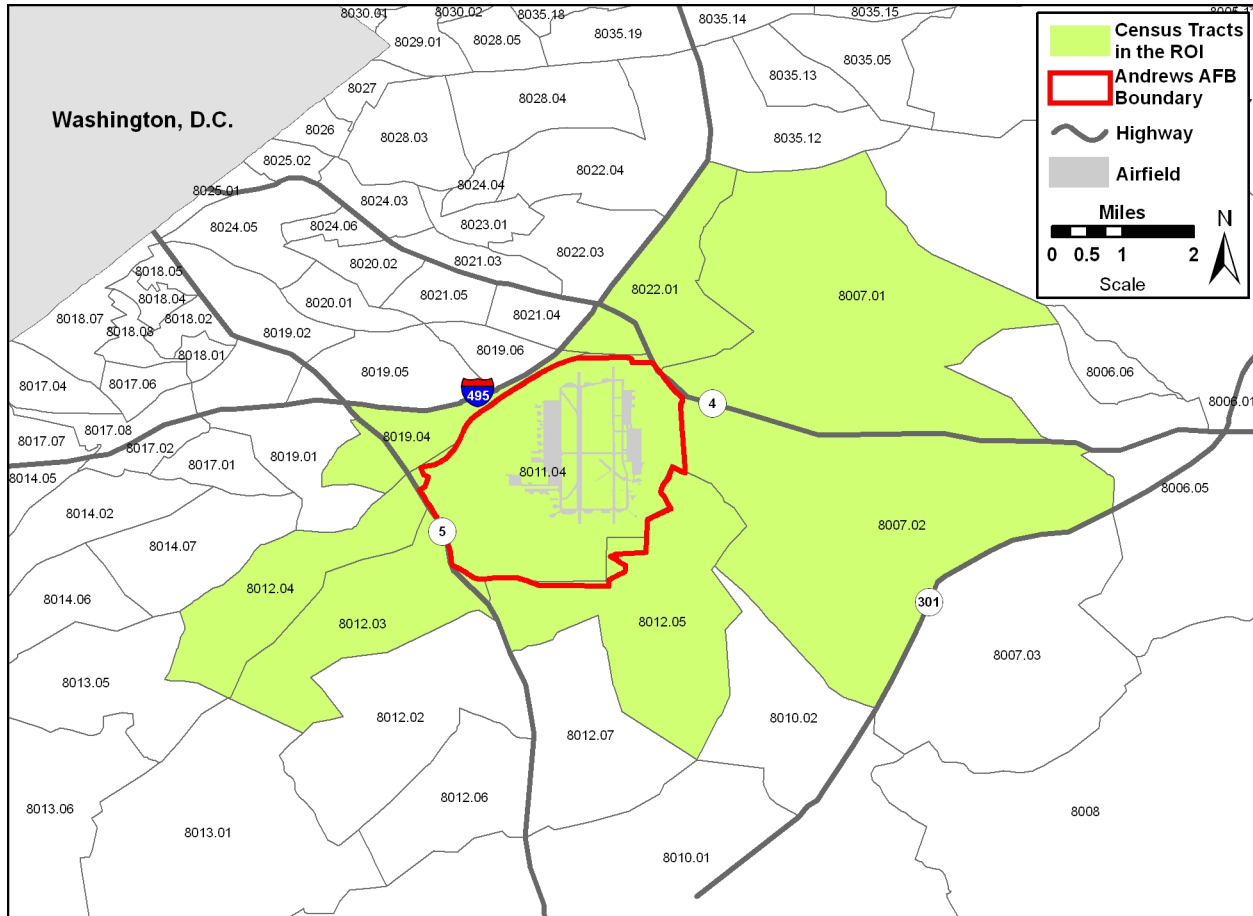


Figure 3-5. Census Tracts in the ROI

Socioeconomic Conditions. Table 3-10 lists the industry of employment for the ROI, Prince George's County, and Maryland. The three industries that employ the largest portions of residents in the ROI, Prince George's County, and Maryland are (1) public administration; (2) educational, health, and social services; and (3) professional, scientific, management, administrative, and waste management services. The ROI has a substantially larger percentage of residents employed by the Armed Forces than county and state averages (U.S. Census Bureau 2000). Andrews AFB contributes to the economic vitality of the ROI by employing 3,247 civilian personnel and contributing to the local economy (USAF 2006).

The ROI has a 3.1 percent unemployment level which is lower than the county (4.1 percent) and statewide (3.2 percent) levels. The per capita income for Prince George's County (\$23,360) is lower than the ROI (\$25,345) and state (\$25,614) levels (see **Figure 3-6**). The median household income for the ROI (\$64,625) is higher than the county (\$55,256) and state (\$52,868) levels. The percentage of people below the poverty level is the lowest in the ROI at 4.6 percent compared to 7.7 percent and 8.5 percent for the county and state, respectively (U.S. Census Bureau 2000).

The ROI has a higher percentage of high school graduates than statewide and county levels (see **Figure 3-7**). A smaller percentage of residents in the ROI (23.5 percent) have received their bachelor's degrees than the statewide (31.4 percent) and county (27.2 percent) levels (U.S. Census Bureau 2000). It is important to note that these percentages are based on individuals who are 25 and older.

Table 3-10. Employment by Industry

Employment by Industry	ROI	Prince George's County	Maryland
Percent of Employed Persons in Armed Forces	5.0%	1.1%	0.8%
Agriculture, forestry, fishing and hunting, and mining	0.3%	0.2%	0.6%
Construction	5.0%	5.9%	6.9%
Manufacturing	3.0%	3.4%	7.3%
Wholesale trade	1.9%	2.0%	2.8%
Retail trade	9.7%	9.4%	10.5%
Transportation and warehousing, and utilities	9.0%	6.7%	4.9%
Information	3.8%	5.1%	4.0%
Finance, insurance, real estate, and rental and leasing	4.4%	6.0%	7.1%
Professional, scientific, management, administrative, and waste management services	12.1%	12.6%	12.4%
Educational, health, and social services	18.8%	20.0%	20.6%
Arts, entertainment, recreation, accommodation, and food services	5.6%	6.5%	6.8%
Other services (except public administration)	5.6%	6.3%	5.6%
Public administration	20.9%	15.9%	10.5%

Source: U.S. Census Bureau 2000

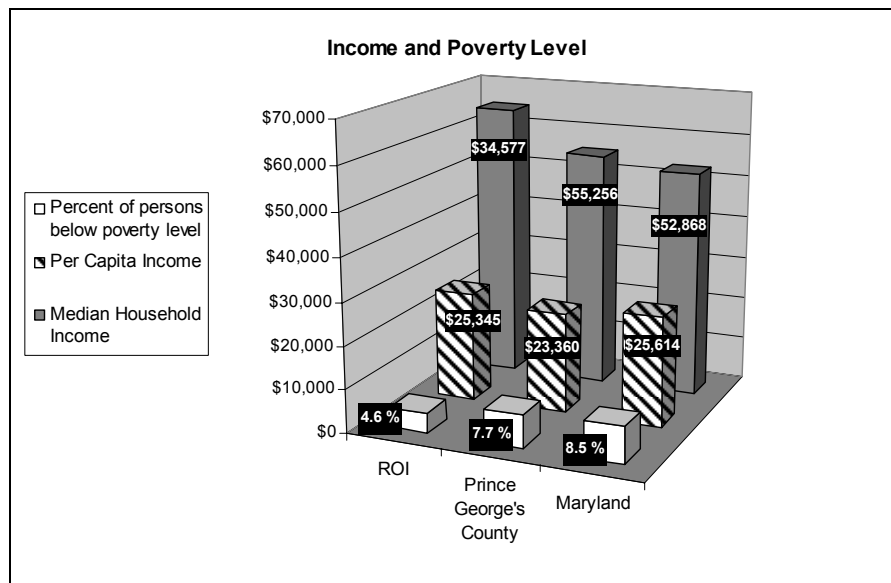


Figure 3-6. Income and Poverty Level for Residents in ROI, Prince George's County, and Maryland

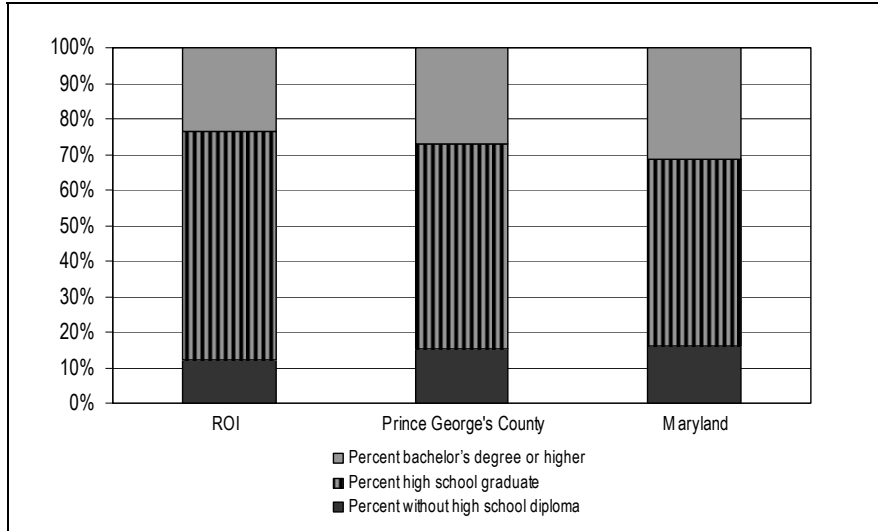


Figure 3-7. Educational Attainment for Residents in ROI, Prince George’s County, and Maryland

Environmental Justice. Race, ethnicity, and the poverty status of people within the ROI, Prince George’s County, and Maryland were characterized to establish a baseline for environmental justice analysis. To establish a baseline for environmental justice effects, income, poverty, and race were examined at the census tract level and compared to the state and county averages. Census tracts having disproportionately low income or high poverty levels or percentages of minorities are discussed in more detail to determine if environmental justice impacts could occur.

Analysis of the racial characteristics of the ROI, Prince George’s County, and Maryland revealed that the percentage of African Americans in the ROI and Prince George’s County is more than double the statewide percentage (**Figure 3-8**) (U.S. Census Bureau 2000). The eight census tracts identified as the ROI (8007.01, 8007.02, 8011.04, 8012.03, 8012.04, 8012.05, 8019.04, and 8022.01) were individually compared to the county and the state of Maryland. As shown in **Table 3-11**, there are five tracts that had a greater percentage of African American residents than Prince George’s County (U.S. Census Bureau 2000).

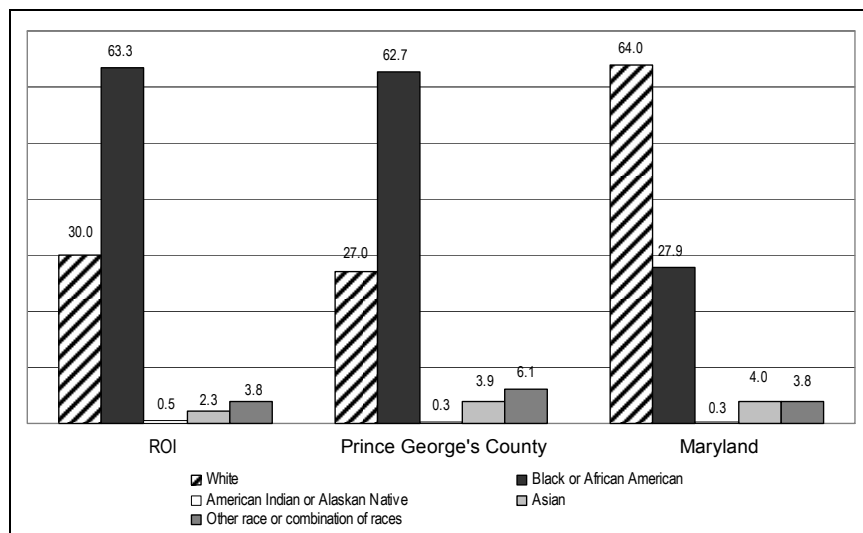


Figure 3-8. Race of Residents in the ROI, Prince George’s County, and Maryland

Table 3-11. Race and Economic Characteristics of Census Tract Residents

Area	White	African American
Maryland	64.0	27.9
Prince George's County	27.0	62.7
Tract 8007.01	16.4	79.6
Tract 8012.03	19.8	72.9
Tract 8012.04	19.0	74.9
Tract 8019.04	19.9	72.8
Tract 8022.01	25.9	68.8

Source: U.S. Census Bureau 2000

3.10 Infrastructure

3.10.1 Definition of the Resource

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function. Infrastructure is wholly human-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as “urban” or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to economic growth of an area. The infrastructure components to be discussed in this section include the transportation network, electricity, central heating and natural gas, communications, potable water supply, sanitary systems and wastewater, and solid waste.

The availability of landfills to support a population’s residential, commercial, and industrial needs is integral in evaluating municipal solid waste (MSW). Alternative means of waste disposal might involve waste-to-energy programs or incineration. In some localities, landfills are designed specifically for, and are limited to, disposal of construction and demolition (C&D) debris. Recycling programs for various waste categories (e.g., glass, metals, and papers) reduce reliance of landfills for disposal.

3.10.2 Existing Conditions

Transportation Network. Andrews AFB is directly adjacent to the Capital Beltway (Interstate 495), approximately 5 miles southeast of Washington D.C. Six gates provide entrance to Andrews AFB, with the Main Gate near the intersection of Westover Drive and North Perimeter Road. Arteries that serve Andrews AFB include Branch Avenue (MD Route 5), Pennsylvania Avenue (MD Route 4), and the Suitland Parkway. Branch Avenue on the western edge of the installation connects to major and minor collector roads, which are fed by local residential and limited access streets near the MFH units. Many MFH neighborhoods are served by cul-de-sacs or loop-end streets (AAFB 2003a).

Electricity. Power is provided to Andrews AFB by Potomac Electric Power Company. There are two 69-kilovolt electrical feeders from off the installation that tie directly into the main substation. The substation houses three 46-megavolt ampere transformers that are forced-air and oil-cooled. From this substation, 20 primary feeder circuits distribute electricity to the rest of Andrews AFB. The distribution system on the installation is a combination of both above and below ground transmissions. However, power lines near MFH are aboveground with plans to be placed below ground (AAFB 2003a).

Central Heating and Natural Gas. Andrews AFB had two central heating plants in Buildings 3409 and 1732. Both central heating plants were permanently shut down in 2005. Individual boilers or heaters were subsequently installed in facilities previously served by the plants. There are now approximately 150 boilers or heaters.

Washington Gas Light Company supplies natural gas to Andrews AFB through seven different connection points. The natural gas distribution system was installed in 1985 and has approximately 10 miles of pipes with size ranges from 2 to 12 inches in diameter. Pipe material is composed of polyethylene. The entire natural gas system is owned and operated by Washington Gas Light Company. Heating plants are being phased out in MFH units; natural gas is becoming the primary heating source for MFH units (AAFB 2003a).

Communications. Phone service is provided by Verizon to the installation, including MFH. Telephone lines on the installation were installed in the 1940s; these have gradually been replaced with fiber optic cables over the past 7 years. There are approximately 220,000 miles of cable-pair copper lines and approximately 78 miles of telephone fiber optic telephone lines installed on the installation (AAFB 2003a). There are 50 computer servers on the installation with planned improvements to the Local Area Network (LAN) to enhance bandwidth.

Potable Water Supply. Andrews AFB does not have its own water supply but instead receives its water from the Washington Suburban Sanitary Commission's (WSSC) main distribution network (AAFB 2003a). Water from the WSSC is drawn from both the Potomac and Patuxent rivers and is drawn into two storage reservoirs. The water received on Andrews AFB is delivered through three connections. The first is a 12-inch service main entering the installation behind Building 1345. The second connection is a 14-inch service-main which enters the installation at the north end of Maryland Drive. The third connection is an 8-inch main that enters the installation at the corner of Dower House Road and Fetchet Avenue (AAFB 2003a). However, this third connection is often closed due to low water pressure. American States Utility Services, Inc. owns, operates, and maintains water distribution lines at Andrews AFB under a utility privatization agreement.

There are three elevated water storage tanks on Andrews AFB. These three storage tanks are not part of the current water supply, and only two of three tanks are connected to the water supply. Currently, these two tanks have been valved off. There is one water tower in Parcel F; however, it would not be included in the privatization lease to the PO. Andrews AFB's water distribution system is approximately 60 years old and consists of direct buried water mains and lines of various size and materials. It is estimated that 60 percent of the water mains are asbestos cement, transite pipe, or cast iron (AAFB 2003a). Newer housing uses polyvinyl chloride (PVC) and ductile iron pipes.

In 2002, Andrews AFB conducted an infrastructure assessment (AAFB 2003a). The assessment rated the water distribution system as unsatisfactory because it does not provide adequate distribution. Brown water has been reported throughout the installation as a result of rust on the interior of the pipes. According to the General Plan there are a series of planned improvements for the water distribution system, which will ultimately replace or renovate the entire system. There are many water wells on Andrews AFB and the MFH parcels, as well as the nearby off-installation area (EDR 2005). None of the wells identified on the installation are used for potable water or general water supply.

Sanitary Systems and Wastewater. Andrews AFB employs two independent collection systems to convey wastewater through gravity sewer and force mains. The gravity lines collect sewage into various lift stations, and are then directed to the main trunk line off the installation (AAFB 2003a). The current sanitary systems on Andrews AFB are approximately 60 years old with more than 33 miles of sewer lines and more than 1,000 manholes. Gravity service pipes range in size from 6 to 24 inches in diameter, while

force lines have a diameter of up to 12 inches. American States Utility Services, Inc. owns, operates, and maintains sewer and wastewater lines at Andrews AFB under a utility privatization agreement.

Some clay tile pipes have deteriorated and caused structural damage due to root penetration, causing sewage to leak into the ground. Newer homes are connected to the sanitary system by PVC pipes that are connected to older pipes and cause flow irregularities. The General Plan indicates that the majority of pipe materials have deteriorated over time. PVC and ductile iron pipes are used only in the newer housing units, consisting of approximately 10 percent of the entire distribution network. Andrews AFB does not have a wastewater treatment plant; sanitary sewage and industrial wastewater are collected and piped to an off-installation treatment plant. Wastewater on the west side of the installation is metered and discharged through a 21-inch trunk line west of West Perimeter Road and treated at the Piscataway Treatment Plant. On the east side of the installation, wastewater discharges to a 12-inch trunk line and is treated at the Western Branch Treatment Plant (AAFB 2003a).

Solid Waste. There are no landfills on Andrews AFB and the majority of nonrecyclable solid waste is transported to Federal IPC, an approved off-installation private landfill (AAFB 2003a, Mitchell 2006). There is no annual limit on the amount (tonnage) of solid waste that is collected and sent to the private landfill (Mitchell 2006). In 2005, Federal IPC collected approximately 6,800 tons of solid waste and 50 tons of recyclables. As of the end of March 2006, Federal IPC has collected approximately 3,100 tons of solid waste and 23 tons of recyclables (Mitchell 2006). Trash refuse and recycling materials are picked up curbside once a week. Yard waste is collected once a month starting in early April and ending at the end of November.

The Resources, Recovery, and Recycling Program (RRRP) office oversees the collection, segregation, accumulation, and disposal of waste recyclables and other waste. The recycling center is in Building 3347 on Celmers Lane on the east side of the installation. The recycling center can schedule pick-ups for larger recyclables and can schedule paper and recyclables pick-ups from any facility. The RRRP office also stocks desk side recycling bins and recycling containers, accepts large recyclables and cardboard, collects bulk solid wastes and used oil, and accepts batteries and recycles battery materials (89 PA 2006a).

3.11 Hazardous Materials and Wastes

3.11.1 Definition of the Resource

Hazardous material is defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and the Toxic Substances Control Act, as any substance with physical properties of ignitability, corrosivity, reactivity, or toxicity that might cause an increase in mortality, serious irreversible illness, incapacitating reversible illness, or pose a substantial threat to human health or the environment. Hazardous waste is defined by the Resource Conservation and Recovery Act (RCRA), which was further amended by the Hazardous and Solid Waste Amendments, as any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes that poses a substantial present or potential hazard to human health or the environment. In general, both hazardous materials and wastes include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, might present substantial danger to public health or welfare or the environment when released or otherwise improperly managed.

Evaluation of hazardous materials and wastes focuses on USTs and aboveground storage tanks (ASTs) and the storage, transport, and use of pesticides and herbicides; fuels; and petroleum, oil, and lubricants (POL). Evaluation might also extend to generation, storage, transportation, and disposal of hazardous

wastes when such activity occurs at or near the project site of a proposed action. In addition to being a threat to humans, the improper release of hazardous materials and wastes can threaten the health and well being of wildlife species, botanical habitats, soil systems, and water resources. In the event of release of hazardous materials or wastes, the extent of contamination varies based on the type of soil, topography, and water resources.

Special hazards are those substances that might pose a risk to human health but are not regulated as contaminants under the hazardous wastes statutes. Hazards include ACM and LBP. The presence of special hazards or controls over them might affect, or be affected by, a proposed action. Information on special hazards describing their locations, quantities, and condition assists in determining the significance of a proposed action.

To protect habitats and people from inadvertent and potentially harmful releases of hazardous substances, the DOD has dictated that all facilities develop and implement Hazardous Material Emergency Planning and Response Plans or Spill Prevention, Control, and Countermeasure Plans. Also, DOD has developed the Environmental Restoration Program (ERP), intended to facilitate thorough investigation and cleanup of contaminated sites on military installations. Through the ERP, DOD evaluates and cleans up sites where hazardous wastes have been spilled or released to the environment. The ERP provides a uniform, thorough methodology to evaluate past disposal sites, control the migration of contaminants, minimize potential hazards to human health and the environment, and clean up contamination. Description of ERP activities provides a useful gauge of the condition of soils, water resources, and other resources that might be affected by contaminants. It also aids in identification of properties and their usefulness for given purposes (e.g., activities dependent on groundwater usage might be restricted until remediation of a groundwater contaminant plume has been completed). These plans and programs, in addition to established legislation (i.e., CERCLA and RCRA), effectively form the “safety net” intended to protect the ecosystems on which most living organisms depend.

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

3.11.2 Existing Conditions

In conformance with the policies established by AFPD 32-70, Andrews AFB has developed plans to manage hazardous materials, hazardous wastes, and special hazards on the installation.

Hazardous Materials. AFI 32-7086, *Hazardous Materials Management*, establishes procedures and standards that govern management of hazardous materials throughout the USAF. It applies to all USAF personnel who authorize, procure, issue, use, or dispose of hazardous materials; and to those who manage, monitor, or track any of those activities. Andrews AFB has established a hazardous materials pharmacy (HMP) in accordance with AFI 32-7086 (AFIERA 2002). The HMP, in Building 3066, is the central location for the receipt, storage, and issue of the majority of hazardous materials at Andrews AFB. The HMP maintains the bulk supply of hazardous materials and delivers them throughout the installation. The HMP ensures that only the smallest quantities of hazardous materials necessary to accomplish the mission are purchased and used.

The management and responsibilities of hazardous materials storage, handling, transfer, spill response, and cleanup are described in the 89 AW Hazardous Materials Plan, dated February 2003 (89 AW 2003). Several spills have occurred in the MFH; spills under 10 gallons are not listed here. In December 2001, 15 gallons of JP-8 jet fuel were spilled along San Antonio Avenue as a result of an improperly purged truck fuel hose. There were multiple releases of sewage from August 2001 to May 2002, ranging from

40 gallons to 200 gallons, due to ruptures, breaks, or blocks. Releases occurred in Parcels F, K, P, and Q, and in Yuma Park.

Buildings 4882 and 4883, used for golf course grounds maintenance are approximately 500 feet southwest of Parcel S. The buildings have a variety of hazardous materials including pesticides (e.g., fungicides, insecticides, and herbicides), new and used POL in 55-gallon drums, solvents (e.g., Safety-Kleen), motor gas (MOGAS) (1,000-gallon double-walled AST), diesel fuel (in an elevated 280-gallon tank), and heating oil (1,000-gallon UST) (89 AW 2003). Pesticides are handled in containers usually no larger than 5 gallons or 50 pound bags. The pesticides are kept in a locker adjacent to Building 4883, which is heated and sprinkled, and has secondary containment. The type and quantity of pesticides stored and used depends on the season. Most of the oils and solvents are kept in areas or on pallets with secondary containment.

There are no hazardous materials storage units or operations in the MFH. Hazardous materials at Andrews AFB are typically found at buildings which support flightline operations and maintenance, as well as the hospital and service stations. Small quantities of hazardous materials, such as cleaners, solvents, antifreeze, gasoline, automobile batteries, and motor oil, likely exist or at one point existed in the MFH.

Hazardous Wastes. Hazardous wastes generated within the state of Maryland must be managed in accordance with USEPA (40 CFR Parts 260–282), state of Maryland (COMAR 26.13, *Disposal of Controlled Hazardous Substances*), and USAF regulatory requirements (AFI 32-7042, *Solid and Hazardous Waste Compliance*). Andrews AFB maintains a Hazardous Waste Management Plan (HWMP) as directed by AFI 32-7042 (AFIERA 2002). This plan prescribes the roles and responsibilities of all members of Andrews AFB with respect to the waste stream inventory, waste analysis plan, hazardous waste management procedures, training, emergency response, and pollution prevention. The plan establishes the procedures to comply with applicable Federal, state, and local standards for solid and hazardous waste management.

Andrews AFB is a large-quantity generator of hazardous waste under the RCRA. By definition, a large quantity generator generates 2,200 pounds or more of hazardous waste per month or 2.2 pounds or more of acutely hazardous waste per month. Wastes generated at Andrews AFB include pesticides, herbicides, POL, deicing fluids, flammable solvents, contaminated fuels and lubricants, paint/coating, stripping chemicals, waste oils, waste paint-related materials, MSW, and other miscellaneous wastes. Management of hazardous wastes is the responsibility of each waste-generating organization and the 316 WG as the host wing. Hazardous waste is stored at an initial accumulation point (IAP), which is at or near the point of generation and under the control of the owner/manager of the generating activity. An IAP is designed to facilitate collection of hazardous wastes and ensure proper management. An IAP is allowed to accumulate up to 55 gallons of hazardous waste or 1 quart of acute hazardous waste. Once the 55 gallons (or 1 quart) limit is reached, the generating activity must transfer the hazardous waste container to the centralized accumulation site (Building 3304) where wastes from several IAPs are placed for periods of up to 90 days pending disposal or further transfer (AFIERA 2002). None of these facilities are located in the MFH.

Each organization has appointed a primary and alternate manager for each hazardous waste site on Andrews AFB. Hazardous waste generators are required to maintain a listing of all the hazardous waste streams generated in their section, with proper identification, handling, storage, and record keeping.

According to the HWMP, each individual assigned to, attached to, or working at Andrews AFB is tasked to take every reasonable precaution to prevent the spillage of oil or hazardous substances and to report

any spill of oil or hazardous substance to the Fire Protection, Civil Engineering Squadron/Environmental Flight, and Aerospace Medicine Squadron/Bioenvironmental Engineering. Also, contractors must

- Obtain approval for all hazardous materials/wastes used or generated on the installation
- Ensure hazardous wastes are managed per 40 CFR and transported in accordance with 49 CFR to a certified disposal facility
- Ensure proper labeling, handling, segregation, collection, and storage of hazardous waste
- Ensure all personnel are properly trained for handling the hazardous waste they generate
- Provide 24-hour notice when scheduling waste disposal requiring a manifest(s) before it is transported off the installation.

Storage Tanks. AFI 32-7044, *Storage Tank Compliance*, implements AFD 32-70, *Environmental Quality*. It identifies compliance requirements for ASTs and USTs and associated piping that store petroleum products and hazardous substances. USTs are subject to regulation under RCRA, 42 U.S.C 6991, and 40 CFR Part 280.

A storage tank is a vessel and its associated piping that contain a product, whether it be petroleum or septic. From a regulatory perspective, if at least 10 percent of the storage tank is underground, it is a UST. If less than 10 percent of the storage tank is underground, it is an AST.

Andrews AFB maintains an inventory of ASTs and USTs on the installation, which includes location, contents, and compliance information. MFH units were heated with oil until the early 1990s. Nearly all of the USTs were removed with the conversion to natural gas. There is some remaining contamination as a result of the removal or leaking of these tanks. Contamination is discussed in the ERP subsection. In addition, there are several ASTs and USTs that are located along the periphery of the property to be conveyed. These tanks are at service stations, maintenance shops, or are a part of the flightline fuel system.

There two USTs at Buildings 4261 and 4252 (no ASTs); funding has been approved for the removal of the two USTs, associated piping, and contaminated soils if present. This removal was scheduled for September 2006. Three ASTs were removed in early 2006 from Farmhouses 1025 and 4691, and Belle Chance.

Pollution Prevention. AFI 32-7080, *Pollution Prevention Program*, implements the regulatory mandates in the Emergency Planning and Community Right-to-Know Act, Pollution Prevention Act of 1990; EO 12856, *Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements*; EO 12902, *Energy Efficiency and Water Conservation at Federal Facilities*; and EO 13101, *Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition*. In accordance with EO 13101, the USAF preferentially chooses recycled-content products where possible. AFI 32-7080 prescribes the establishment of Pollution Prevention Management Plans. Andrews AFB fulfills this requirement with the following plans:

- Storm Water Pollution Prevention Plan (1998)
- Hazardous Waste Management Plan (2002)
- Hazardous Materials Plan (2003)
- Pollution Prevention Management Plan (2003)
- Solid Waste Management Plan (2003)
- Spill Prevention, Control, and Countermeasure Plan (2004)

These plans assist Andrews AFB in maintaining a waste-reduction program and meeting the requirements of the CWA; the NPDES permit program; and Federal, state, and local requirements for spill prevention control and countermeasures.

Environmental Restoration Program. ERP, formerly known as the Installation Restoration Program, is a subcomponent of the Defense Environmental Restoration Program that became law under SARA. The ERP requires each DOD installation to identify, investigate, and clean up hazardous waste disposal or release sites.

Andrews AFB began its ERP in 1985 with the investigation of possible locations of hazardous wastes contamination. Andrews AFB was officially listed on the National Priorities List by USEPA in May 1999. The CERCLA sites are managed by the Andrews AFB's regulatory partnering group, which includes USEPA, MDE, and the Prince George's County Health Department. Petroleum sites exempted from regulation under CERCLA are delegated by USEPA to the MDE Waste Management Administration, Oil Control Program.

Andrews AFB manages approximately 28 sites including 5 Areas of Concern (AOCs), which include three remote sites in Brandywine and Davidsonville, Maryland. Numerous clean-up actions have taken place at Andrews AFB, including the removal of hundreds of USTs, installation of groundwater treatment systems at key locations, and removal of residual waste from areas to decrease the risk to human health and the environment.

ERP site ST-19 is a collection of several areas that were discovered to have groundwater contamination as a result of the removal of USTs in the MFH (see **Figure 3-9**). Parcels included in this site are A, B, C, G, H, K, M, N, P, Q, R, and S, although contamination has largely remained near the source. Many of the smaller sites associated with ST-19 have been closed; however, there are three remaining sites. As of March 2005, contamination remains in Parcel P at Building 2171 (Oxford Road); this site is known as ST-19 S34. Contamination also remains in Parcel K at Building 4792 (Spokane Lane), and Parcel G, formally at Building 2078. These sites are known as S38 and S43 respectively. Contaminants at these sites include petroleum products and VOCs. Remedial actions are underway at these locations.

ERP site ST-18 is in Parcel S (see **Figure 3-9**). Contamination at this site was the result of a leaking UST for storing heating oil. Remedial action was taken and this site has been recommended for closure. Lead contamination was found at solid waste management unit (SWMU) 75 in Parcel F as a result of maintenance on the water tower. Removal of contamination was performed around the beginning of 2003. Although the post-removal sampling conducted in 2003 did not indicate any exceedances of the residential standard of 400 milligrams per kilogram, it did not include sampling of a fenced area within which the West Water Tower was located. Sampling conducted in December 2005 indicated some contamination above the lead residential standard in areas both within and outside the fence. A project to demolish the water tower was scheduled for 2006; additional soil sampling was recommended as part of the water tower demolition based on the December 2005 sampling. Also recommended is the removal of any impacted soil if resampling indicates contamination above standards. SWMU 69, in Parcel G, was a fire-training area operated in the 1960s, prior to the construction of MFH units. An investigation of SWMU 69 is planned for the future.

Asbestos-Containing Material. AFI 32-1052, *Facilities Asbestos Management*, provides the direction for asbestos management at USAF installations. This instruction incorporates by reference applicable requirements of 29 CFR Part 669 et seq., 29 CFR 1910.1025, 29 CFR 1926.58, 40 CFR 61.3.80, Section 112 of the CAA, and other applicable AFIs and DOD Directives. AFI 32-1052 requires bases to develop an asbestos management plan for the purpose of maintaining a permanent record of the status and

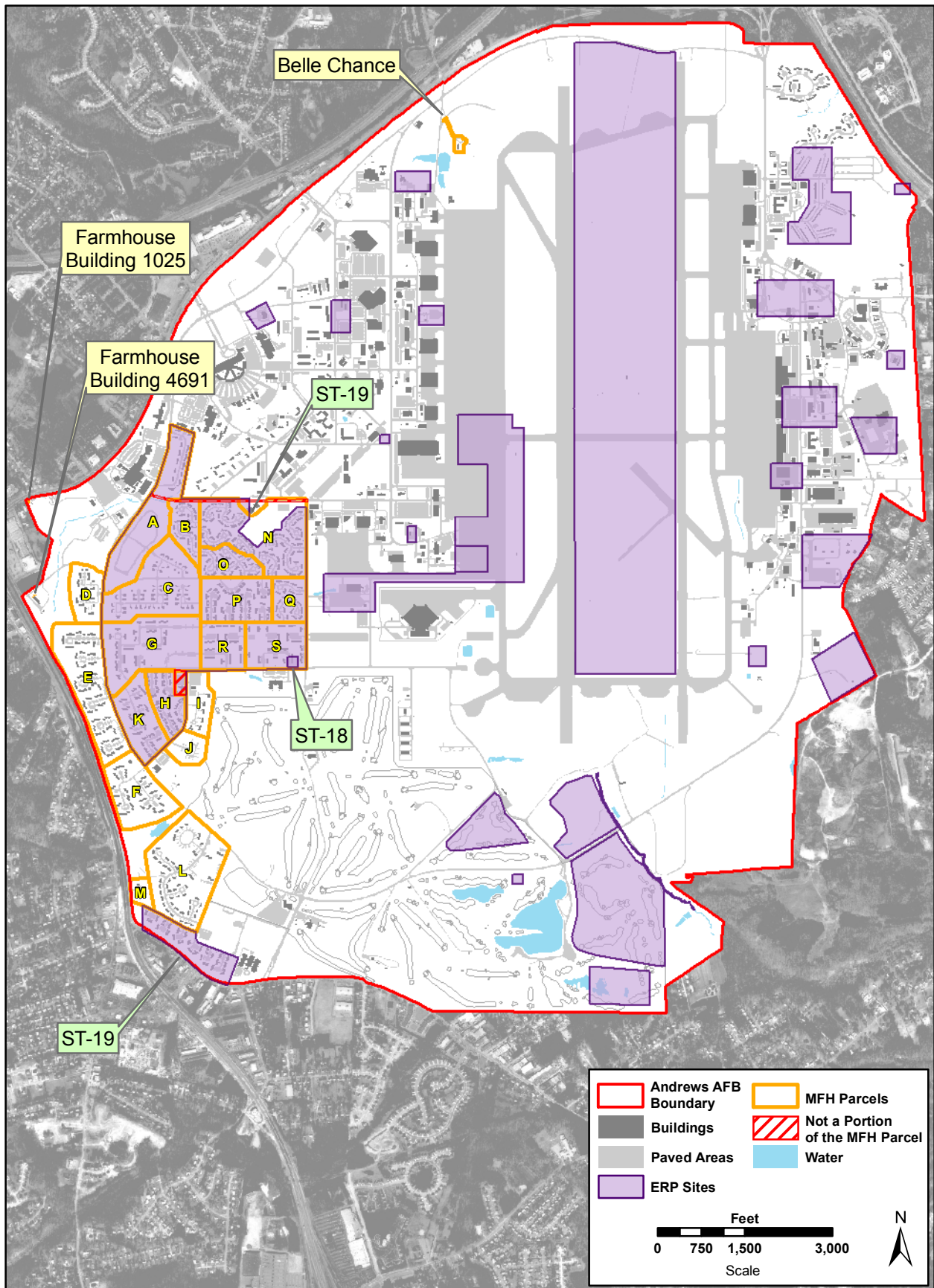


Figure 3-9. ERP Sites on Andrews AFB

condition of ACM in installation facilities, as well as documenting asbestos management efforts. In addition, the instruction requires installations to develop an asbestos operating plan detailing how the installation accomplishes asbestos-related projects. ACM is regulated by the USEPA with the authority promulgated under the Occupational Safety and Health Act, 29 U.S.C. Section 669, et seq. Section 112 of the CAA and COMAR 26.11.21, *Control of Asbestos*, regulate emissions of asbestos fibers to ambient air. The USEPA policy is to leave asbestos in place if disturbance or removal could pose a health threat.

Asbestos at Andrews AFB is managed in accordance with the *Asbestos Management Program Plan* that was updated in 2004 (89 AW 2004). This plan specifies procedures for the removal, encapsulation, enclosure, and repair activities associated with ACM abatement projects. In addition, it is designed to protect personnel who live and work on Andrews AFB from exposure to airborne asbestos fibers as well as to ensure the installation remains in compliance with Federal, state, and local regulations pertaining to ACM. Not all of the buildings on Andrews AFB have been surveyed to locate, identify, and evaluate all ACM (89 AW 2004). Materials that might contain asbestos include pipe insulation and floor tiles. ACM is removed on an as-needed basis to minimize health risks from release of asbestos fibers during normal activities, maintenance, renovation, or demolition.

Units in Parcel A (except in the northern portion) were completely replaced during the 2005–2006 timeframe and do not contain ACM. Units in Parcels D, F, G (except Buildings 2072 and 2091), K, and most of S have had whole-house renovations. Parcel L is undergoing whole-house renovation or replacement. ACM insulation is present around the metal chimneys in MFH units on Ashwood Circle. It is planned for encapsulation to prevent the ACM from becoming friable. There is also ACM ductwork that was poured contiguously with the floor slabs during initial construction performed in the 1960s. Although these units have been renovated, it cannot be assumed that they are free of ACM.

All or some of the units in Parcels B, H, I, N, O, P, Q, and R have had minor or complete renovations of the bathrooms or the kitchens. Some of these renovations might have had ACM abatement if it was necessary at that time. All of these units were built between 1966 and 1974 and would likely contain ACM in the remaining portion of the unit.

Parcels C and E, built between 1968 and 1972, have not had any renovations and there would not have been ACM abatement. The three units in Parcel M (Buildings 4242, 4252, and 4261) were built in 1946. These units have not had any renovations and are likely to have ACM.

The two farmhouses (Buildings 1025 and 4691) are considered one MFH parcel, and they predate Andrews AFB. Building 1025 is used to train personnel in the culinary arts. Building 4691 is presently vacant. Both of these buildings might have had renovations over the years, however, it should be assumed that they have ACM.

The structures on the Belle Chance parcel were built in 1912. A May 2003 survey of Belle Chance confirmed that there is ACM present in the residence (89 AW 2004).

In addition, it is suspected that the MFH in Parcels E and I have asbestos-containing subflooring in the bathrooms. Units in Parcels E, F, K, I, and L have been found or are expected to have their foundations poured on asbestos-containing ductwork used for the HVAC system (Brune 2006). Parcel J has no existing MFH units; however, there is cement and piping buried in this parcel that is suspect of containing ACM. Digging in Parcel J could uncover ACM.

Because the asbestos surveys are not comprehensive of the MFH parcels, the homes which have not been surveyed or have not had whole-house renovations should be considered likely to have ACM.

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

USAF policy and guidance establishes LBP management at USAF facilities. The policy incorporates by reference the requirements of COMAR 26.16, *Lead*; 29 CFR 1910.120; 29 CFR Part 1926; 40 CFR 50.12; 40 CFR Parts 240 through 280; the CAA; and other applicable Federal regulations. In addition, the policy requires each installation to develop and implement a facility management plan for identifying, evaluating, managing, and abating LBP hazards. LBP at Andrews AFB is managed in accordance with the *Lead-Based Paint Management Plan* that was updated in 2004 (USAF 2004). Not all of the buildings on Andrews AFB have been surveyed to locate, identify, and evaluate all materials containing LBP (USAF 2004).

A May 2003 survey of Belle Chance confirmed that there is LBP present in the residence (USAF 2004). The majority of the remaining MFH was built prior to 1978, the year LBP was banned. Except for the units which have whole-house renovations (Parcels D, F, G, K, most of S, and L is underway) all MFH housing should be considered to contain LBP. There have been no abatement activities except where repairs have been made, if any. Parcel A, as well as some units in Parcels G and L are completely new; these units do not have LBP.

Radon. Radon is a naturally occurring radioactive gas found in the soil and rocks; it comes from the natural breakdown or decay of uranium. Radon has the tendency to accumulate in enclosed spaces that are usually below ground and poorly ventilated (e.g., basements). Radon is an odorless, colorless gas that has been determined to increase the risk of developing lung cancer.

The USEPA's recommended mitigation "action level" is 4.0 picocuries per liter (pCi/L). The average (mean) radon level in U.S. homes is about 1.3 pCi/L, or three times the outdoor level of 0.4 pCi/L. Because there is no known safe level of radon exposure, USEPA recommends that Americans consider fixing their home for radon levels between 2 pCi/L and 4 pCi/L. USAF policy requires implementation of the USAF Radon Management Plan to determine levels of radon exposure to military personnel and their dependents. The USAF's policy is to mitigate elevated levels of radon to acceptable levels and conduct follow-up sampling to validate the effectiveness of the mitigation. Radon activity in Prince George's County, Maryland, is shown in **Table 3-12**.

Table 3-12. Radon Activity in Prince George's County, Maryland

Location	Area	Average Activity (pCi/L)	< 4 pCi/L	4–20 pCi/L	> 20 pCi/L
Prince George's County (81 sites)	Living Area (First Floor)	1.428	94%	6%	0%
	Living Area (Second Floor)	0.300	100%	0%	0%
	Basement	2.321	83%	17%	0%

Source: EDR 2005

Most MFH units do not have any living spaces that are below ground. The exceptions are Buildings 4242, 4252, and 4261 in Parcel M; Buildings 1025 and 4691 (Farmhouses); and Building 1966 (Belle Chance), all of which have basements. It is not known whether the basements were used for living space. The basement for Building 1966 has a boiler system that was used to heat the house. All of these units, except Building 1966, are slated for demolition upon conveyance. There are 35 MFH units on Columbus Circle (in Parcel A) that have approximately a 44-inch crawl space below the floor joist. The crawl space consists of bare soil covered by a vapor barrier.

Polychlorinated biphenyls. Polychlorinated biphenyls (PCBs) are a group of chemical mixtures used as insulators in electrical equipment, such as transformers and fluorescent light ballasts. Federal regulations govern items containing 50 to 499 ppm of PCBs. Chemicals classified as PCBs were widely manufactured and used in the United States throughout the 1950s and 1960s. PCB-containing oil is typically found in older electrical transformers and light fixtures (ballasts).

Transformers containing greater than 500 ppm PCBs, between 50 and 500 ppm PCBs, and less than 50 ppm PCB are considered PCB, PCB-contaminated, and non-PCB, respectively.

Pole-mounted transformers were observed in Parcels A, E, F, H, K, L, and M. There are also several pad-mounted transformers in MFH. There are no PCBs in the MFH. The remaining PCB-containing materials are from industrial sections of the installation, and as of September 2003, they were being disposed (AMC 2004).

Mold. Mold spores are commonly found in both indoor and outdoor air. Mold growth can occur indoors when excessive moisture or water accumulates. Some molds can grow on wood, paper, food, and carpets. As molds grow, they digest whatever they are growing on. Mold growth can cause damage to structures, as well as health effects via the production of allergens, irritants, and toxins. Mold was observed in Buildings 4242, 4252, and 4261 of Parcel M and several units in Parcel E, likely the result of moisture inside from broken windows.

Ordinance. There are no portions of the MFH within the explosive safety zones. There is no known ordinance on the MFH parcels.

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4. Environmental Consequences

This section presents an evaluation of the environmental effects that might result from implementing the Proposed Action, or the No Action Alternative. The specific criteria for evaluating effects and assumptions for the analyses are presented under each resource area. Evaluation criteria for most potential effects were obtained from standard criteria; Federal, state, or local agency guidelines and requirement; and legislative criteria. Direct and indirect environmental effects are discussed. Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and are later in time or farther removed in distance but still reasonable foreseeable. Effects are also evaluated based on intensity (negligible, minor, moderate, or significant) and duration (short-term or long-term).

4.1 Noise

4.1.1 Evaluation Criteria

Noise impact analysis typically evaluates potential changes to the existing noise environment that would result from implementation of a proposed action. Potential changes in the acoustic environment can be beneficial (i.e., if they reduce the number of sensitive receptors exposed to unacceptable noise levels or reduce the ambient sound level), negligible (i.e., if the total number of sensitive receptors to unacceptable noise levels is essentially unchanged), or adverse (i.e., if they result in increased sound exposure to unacceptable noise levels or ultimately increase the ambient sound level). Projected noise effects were evaluated qualitatively and quantitatively for this Proposed Action.

4.1.2 Proposed Action

Short-term minor adverse effects would be expected from the Proposed Action as a result of construction activities. Once the housing units are conveyed to a private developer under the Proposed Action, some buildings would be demolished, constructed, and renovated. Construction activities would include demolition, paving, and building. Under the Proposed Action there would not be an increase in long-term noise-producing activities; however, residential land uses would be located in an area of the installation with elevated noise levels.

Noise from construction activities varies depending on the type of construction being done, the area in which the project would occur, and the distance from the source. To predict how the construction activities would impact adjacent populations, noise from each of the probable construction activities (demolition, paving, and building) was estimated. For example, as shown on **Table 3-2**, paving usually involves several pieces of equipment (such as pavers and rollers) which can be used simultaneously. The cumulative noise from the paver and roller was estimated to determine the total impact of construction noise from paving at a given distance. Since most of the housing units under the Proposed Action are adjacent to each other, construction noise was estimated at relatively close distances. Examples of expected construction noise are as follows:

- Populations 50 feet away from demolition would experience noise levels of approximately 90 dBA.
- Populations 40 feet from building would experience noise levels of about 94 dBA.
- Populations 100 feet away from paving construction would experience noise levels of approximately 83 dBA.

Implementation of the Proposed Action would have temporary effects on the noise environment from the use of heavy equipment during construction activities. However, noise generation would last only for the duration of construction activities and would be isolated to normal working hours (i.e., between 7:00 a.m. and 5:00 p.m.). Therefore, it is anticipated that implementation of the Proposed Action would have negligible effects as a result of the construction activities.

Long-term minor adverse effects would be expected. The Belle Chance residence is within the 65- to 69-dBA noise zone based on the current AICUZ study for Andrews AFB. USAF guidance indicates that this noise level is incompatible with residential land use unless noise level reduction is achieved through incorporation of noise attenuation measures (USAF 1999). If renovation Belle Chance were to occur, or if new construction were planned in areas where the noise contour is 65 dBA or greater, measures to achieve noise level reductions would be incorporated into those structures.

4.1.3 No Action Alternative

The No Action Alternative would result in continuation of the existing noise conditions and their associated impacts, as discussed in **Section 3.1.2**. No additional effects would be expected as a result of the Proposed Action not being implemented.

4.2 Land Use

4.2.1 Evaluation Criteria

The significance of potential land use impacts is based on the level of land use sensitivity in areas affected by a proposed action and compatibility of proposed actions with existing conditions. In general, a land use impact would be significant if it were to

- Be inconsistent or in noncompliance with existing land use plans or policies.
- Preclude the viability of existing land use.
- Preclude continued use or occupation of an area.
- Be incompatible with adjacent land use to the extent that public health or safety is threatened.
- Conflict with planning criteria established to ensure the safety and protection of human life and property.

4.2.2 Proposed Action

Land under the Proposed Action would be conveyed to a private developer. The majority of conveyed properties would continue to be used as residential; however, Parcels N, O, P, Q, R, and S would revert back to Andrews AFB for redevelopment following demolition of MFH units.

Parcels N, O, P, Q, R, and S (see **Figure 2-2**) would be demolished and improvements would be made to these areas. These lots are the only areas under the Proposed Action where land uses are changing, but the future uses of these properties would be compatible with residential uses (AAFB 2006). After completion of demolition of Parcels N, O, P, Q, R, and S, these lots would be conveyed back to the USAF. Land use on Parcels A through M under the Proposed Action would remain residential after being conveyed to a private developer. The Proposed Action would be compatible with current and future land uses on Parcels A through M (AAFB 2006).

No adverse long-term effects would be expected on land use under the Proposed Action. Residential properties would be conveyed to a private developer and would be maintained as residential properties. Future land uses on Parcels N through S would be compatible with residential uses (AAFB 2006).

As discussed in **Section 4.2.2**, if renovation of Belle Chance were to occur, or if new construction was planned in areas where the noise levels are 65 dBA or greater, noise attenuation measures to achieve noise level reductions are encouraged so that land use is compatible. Currently, the Belle Chance parcel is not designated for residential land uses. USAF guidance discourages residential use when noise levels exceed 65 dBA (USAF 1999). Noise attenuation measures would be incorporated into structures.

There would be no short- or long-term effects on Camp Springs or adjacent areas under the Proposed Action. Camp Springs land uses abutting Andrews AFB are congruous with land uses on Andrews AFB. The Proposed Action is compatible with the surrounding land use in Prince George's County and would not conflict with future planning.

4.2.3 No Action Alternative

The No Action Alternative would result in continuation of the existing condition. Long-term effects on land use planning could result if the proposed demolition of Parcels N through S did not occur as proposed under the MHPI. Under the No Action Alternative, NEPA analysis would be required for the demolition of any MFH, which could slow redevelopment plans on Andrews AFB.

4.3 Air Quality

4.3.1 Evaluation Criteria

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

- Cause or contribute to a violation of any national or state ambient air quality standard
- Expose sensitive receptors to substantially increased pollutant concentrations
- Represent an increase of 10 percent or more in an affected AQCR emissions inventory
- Exceed any evaluation criteria established by a SIP.

Effects on air quality in NAAQS nonattainment areas are considered significant if the net changes in project-related pollutant emissions result in any of the following scenarios:

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

With respect to the General Conformity Rule, effects on air quality would be considered significant if a proposed action would result in an increase of a nonattainment or maintenance area's emissions inventory by 10 percent or more for one or more nonattainment pollutants, or if such emissions exceed *de minimis*

threshold levels established in 40 CFR 93.153(b) for individual nonattainment pollutants or for pollutants for which the area has been redesignated as a maintenance area.

The *de minimis* threshold emissions rates were established by USEPA in the General Conformity Rule to focus analysis requirements on those Federal actions with the potential to have “significant” air quality impacts. **Table 4-1** presents these thresholds, by regulated pollutant. These *de minimis* thresholds are similar, in most cases, to the definitions for major stationary sources of criteria and precursors to criteria pollutants under the CAA’s New Source Review Program (CAA Title I). As shown in **Table 4-1**, *de minimis* thresholds vary depending upon the severity of the nonattainment area classification. No *de minimis* threshold emissions rate has been established by USEPA for PM_{2.5}; regardless, the Proposed Action would not cause a significant increase in fine particulate emissions.

In addition to the *de minimis* emissions thresholds, Federal PSD regulations define air pollutant emissions to be significant if the source is within 10 kilometers of any Class I area, and emissions would cause an increase in the concentration of any regulated pollutant in the Class I area of 1 µg/m³ or more (40 CFR 52.21(b)(23)(iii)).

Table 4-1. Conformity *de minimis* Emissions Thresholds

Pollutant	Status	Classification	<i>de minimis</i> Limit (tpy)
O ₃ (measured as NO _x or VOCs)	Nonattainment	Extreme	10
		Severe	25
		Serious	50
		Moderate/marginal (inside ozone transport region)	50 (VOCs)/100 (NO _x)
		All others	100
	Maintenance	Inside ozone transport region	50 (VOCs)/100 (NO _x)
		Outside ozone transport region	100
CO	Nonattainment/maintenance	All	100
PM ₁₀	Nonattainment/maintenance	Serious	70
		Moderate	100
		Not Applicable	100
SO ₂	Nonattainment/maintenance	Not Applicable	100
NO _x	Nonattainment/maintenance	Not Applicable	100

Source: 40 CFR 93.153

4.3.2 Proposed Action

Short-term direct minor adverse effects would be expected. No long-term air quality effects would be expected from the Proposed Action. Regulated pollutant emissions from the Proposed Action would not contribute to or affect local or regional attainment status with NAAQS. The Proposed Action would

generate air pollutant emissions as a result of grading, filling, compacting, demolition, and construction operations, but these emissions would be short-term.

The construction projects would generate total suspended particulate and PM₁₀ emissions as fugitive dust from ground-disturbing activities (e.g., grading, demolition, soil piles) and combustion of fuels in construction equipment. Fugitive dust emissions would be greatest during the initial site preparation activities and would vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions. The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of construction activity.

Fugitive dust emissions for various construction activities were calculated using emissions factors and assumptions published in USEPA's AP-42 Section 11.9 dated October 1998 and Section 13.2 dated December 2003. These estimates assume that 230 working days are available per year for construction (accounting for weekends, weather, and holidays). Using data from the National Oceanic and Atmospheric Administration, the average soil percent moisture was estimated to be around 85 percent (NOAA 2006). Wind speeds of greater than 12 miles per hour are recorded 36 percent of the time during the O₃ season (May 1 to October 31), based on average wind rose data and measured speed for Washington, D.C. (USEPA 2006c).

Construction operations would also result in emissions of criteria pollutants as combustion products from construction equipment, as well as evaporative emissions from architectural coatings and asphalt paving operations. These emissions would be of a temporary nature. The emissions factors and estimates were generated based on guidance provided by USEPA's *Compilations for Inventories and Emissions Factors* and USEPA's AP-42 (USEPA 2006d).

For purposes of this analysis, the project duration and affected project site area that would be disturbed (presented in **Section 2**) was used to estimate fugitive dust and all other criteria pollutant emissions. The construction emissions presented in **Table 4-2** include the estimated annual construction PM₁₀ emissions associated with the Proposed Action at Andrews AFB. These emissions would produce slightly elevated short-term PM₁₀ ambient air concentrations. However, the effects would be temporary, and would fall off rapidly with distance from the proposed construction site.

Specific information describing the types of construction equipment required for a specific task, the hours the equipment is operated, and the operating conditions vary widely from project to project. For purposes of analysis, these parameters were estimated using established methodologies for construction and experience with similar types of construction projects. Combustion by-product emissions from construction equipment exhausts were estimated using USEPA's AP-42 emissions factors for heavy-duty, diesel-powered construction equipment.

The construction emissions presented in **Table 4-2** include the estimated annual emissions from construction equipment exhaust associated with the Proposed Action. As with fugitive dust emissions, combustion emissions would produce slightly elevated air pollutant concentrations. Early phases of construction projects involve heavier diesel equipment and earthmoving, resulting in higher NO_x and PM₁₀ emissions. Later phases of construction projects involve more light gasoline equipment and surface coating, resulting in more CO and VOC emissions. However, the effects would be temporary, fall off rapidly with distance from the proposed construction site, and would not result in any long-term effects. Emissions estimates were based on the assumption that the Proposed Action would be completed over a 6-year period from Calendar Year 2007–2012. All facilities scheduled for demolition and construction were equally divided over this timeframe.

Table 4-2. Annual Construction Emissions Estimates from the Proposed Action

Calendar Year	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO _x (tpy)	PM ₁₀ (tpy)
2007	10.7	1.9	13.3	0.3	11.1
2008	10.7	1.9	13.3	0.3	11.1
2009	10.7	1.9	13.3	0.3	11.1
2010	10.7	1.9	13.3	0.3	11.1
2011	10.7	1.9	13.3	0.3	11.1
2012	10.7	1.9	13.3	0.3	11.1
<i>de minimus</i> threshold	100	100	NA	NA	100

Since a USEPA-designated nonattainment area is affected by this Proposed Action, the USAF must comply with the Federal General Conformity Rule (40 CFR Part 93). To do so, an analysis has been completed to ensure that, given the changes in direct and indirect emissions of the O₃ precursors (NO_x and VOCs), PM₁₀, and CO, the Proposed Action would be in conformity with applicable CAA requirements. The Conformity Determination requirements specified in this rule can be avoided if the project-related nonattainment pollutant emissions rate increases are below *de minimis* thresholds levels for each pollutant and are not considered regionally significant. For purposes of determining conformity in this nonattainment area, projected regulated pollutant emissions associated with the Proposed Action were estimated using available construction emissions and other nonpermitted emissions source information. The emissions calculations and *de minimis* threshold comparisons are collectively presented in the Air Conformity Analysis provided in **Appendix F**.

As mentioned earlier, Prince George's County is classified as being moderate nonattainment for 8-hour O₃, nonattainment for PM_{2.5}, maintenance for CO, and is in unclassified/attainment for all other criteria pollutants. As shown in **Table 4-2**, the Proposed Action would generate emissions well below conformity *de minimis* limits as specified in 40 CFR 93.153. Because the emissions generated would be below *de minimis* levels, it is reasonable to assume that the temporary construction emissions caused by the Proposed Action would not cause a violation of the NAAQS. Therefore, no significant effect on regional or local air quality would result from implementation of the Proposed Action.

The Proposed Action consists of land and facility conveyance, leases, construction, demolition, and renovation projects. A description of these activities is provided in **Section 2.1.1**. Conveyance, leasing, and renovation aspects of the Proposed Action would not be expected to impact regional air quality.

According to 40 CFR Part 81, there are no Class I areas in the vicinity to Andrews AFB. Therefore, Federal PSD regulations would not apply to the Proposed Action.

Local and regional pollutant effects resulting from direct and indirect emissions from stationary emissions sources under the Proposed Action would be addressed through Federal and state permitting program requirements under New Source Review regulations (40 CFR Parts 51 and 52).

4.3.3 No Action Alternative

The No Action Alternative would result in continuation of the existing air quality conditions and their associated impacts, as discussed in **Section 3.3.2**. No additional effects on air quality would be expected as a result of the Proposed Action not being implemented.

4.4 Safety

4.4.1 Evaluation Criteria

If implementation of the proposed project were to substantially increase risks associated with the safety of construction personnel, contractors, or the local community, or substantially hinder the ability to respond to an emergency, it would represent a significant impact. Impacts were assessed based on the potential effects of construction and operational activities.

4.4.2 Proposed Action

Short-term, minor adverse construction safety effects would be expected during construction and demolition projects associated with the Proposed Action. Implementation of the proposed project would slightly increase the short-term risk associated with construction contractors performing work at the chosen project sites during the normal workday because the level of such activity would increase. Contractors would be required to establish and maintain safety programs. Projects associated with constructing the proposed 258 MFH units, demolishing the 851 MFH units, or renovating the 139 MFH units would not pose a safety risk to other personnel, family members living in MFH areas, or to activities at or within the vicinity of the chosen project area. Work areas surrounding construction and demolition activities would be fenced and appropriate signs posted to further reduce safety risks to children and other family members in MFH. No impacts regarding fire hazards or public safety are expected to occur within the vicinity of the chosen project areas from construction and demolition projects planned as part of the Proposed Action.

4.4.3 No Action Alternative

The No Action Alternative would result in continuation of the existing condition. No effects as a result of the No Action Alternative would be expected on safety. However, many of the MFH units within Andrews AFB are inadequate and could present a safety risk to residents if they are not properly maintained and renovated to meet safe living conditions.

4.5 Geological Resources

4.5.1 Evaluation Criteria

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential impacts of a proposed action on geological resources. Generally, impacts can be avoided or minimized if proper construction techniques, erosion-control measures, and structural engineering design are incorporated into project development.

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

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

Impacts on geological resources could be significant if they altered the lithology, stratigraphy, and geological structure that control groundwater quality, distribution of aquifers and confining beds, and groundwater availability; or change the soil composition, structure, or function within the environment.

4.5.2 Proposed Action

Negligible to minor, short- and long-term adverse effects on geology, topography, and soils would be expected as a result of the conveyance of 490 newly built or renovated housing units, the demolition of 851 existing housing units, the renovation of 139 units, and the construction of 258 new units. The construction of new MFH units would occur in existing developed neighborhoods.

No new ground-disturbing activities would be expected in association with the conveyance or renovation of existing housing units, and there would be no expected adverse effects on geology, topography, or soils. Minimal ground-disturbing activities in previously undisturbed areas would be expected at locations where new housing units would be reconstructed in the footprints of currently existing units scheduled to be demolished under the Proposed Action. Under this scenario, effects on geology, topography, or soils would be expected to be negligible and short-term.

Negligible to minor short- and long-term adverse effects on soils would be expected as a result of the demolition of existing housing units and the construction of new homes. Construction activities would be expected to directly impact the existing topography and soils as a result of grading, excavation, placement of fill, compaction, mixing, or augmentation necessary to prepare the sites for redevelopment. Additional adverse effects could occur as a result of erosion and associated sedimentation during demolition and construction, especially in areas of moderate to steep slopes, in highly erodible soils, and where vegetative cover was removed during site development. A Demolition Plan would be established and implemented by the PO as part of an overall Construction Management Plan. The Demolition Plan would provide a phased approach to demolition of existing units, appurtenances, and infrastructure reducing the area of soils exposed to potential erosion at a given time during the development process.

Erosion control would be a consideration of all land-disturbing activities. Erosion- and sediment-control plans developed consistent with the *Maryland Erosion and Sediment Control Guidelines for State and Federal Projects and the Erosion and Sediment Control Regulations* (COMAR 26.17.01) would be prepared and implemented for all land-disturbance activities. Construction in areas of highly erodible soils would be avoided to the extent possible and erosion- and sediment-control and storm water management practices would be included in preliminary designs for construction. Implementation and maintenance of erosion and sediment control practices consistent with the developed plans would minimize potential soil erosion and off-site sedimentation associated with implementation of the preferred alternative.

Demolition and construction activities on the installation would be expected to occur primarily in the footprint of the existing housing units, resulting in only minimal potential increases in impervious surfaces at these locations. Overall, the total number of housing units would be reduced from the current 1,480 units to 887, resulting in a reduction in impervious surfaces associated with the housing units. Demolition and construction of new housing units would be considered reconstruction under the *Maryland Storm Water Management Guidelines for State and Federal Projects* (COMAR 26.17.02). Following these guidelines, any reconstruction of, or new construction on, existing impervious area, exceeding 5,000 square feet, is considered redevelopment. Guidelines for redevelopment state that all redevelopment projects will reduce existing impervious areas within the project limits by a minimum of 20 percent. When this reduction is not possible, storm water management practices are required to provide qualitative control for a minimum of 20 percent of the projects predevelopment impervious area. A project of this size would also require an erosion- and sediment-control plan (discussed above) and a

storm water management plan. The plans should include supporting computations, drawings, and sufficient information describing the manner, location, and type of management measures for storm water runoff that would be implemented over the entire project. Projects that disturb more than 1 acre would be required to obtain a NPDES Phase II storm water permit. Under this alternative, both of these thresholds would be exceeded and the above-stated plans and permits would be required. Following these guidelines, effects on geology, topography, or soils resulting from increased storm water runoff would be negligible to minor.

Under the lease agreement, the PO would be required to maintain all soil and water conservation structures and take appropriate measures to prevent or control soil erosion within the premises. These measures would be addressed in permits and in required SWPPPs. The PO would be required to comply with all applicable permits, including the storm water permit and accompanying SWPPP, reducing the potential for adverse effects on geology, topography, and soils associated with the development and operation of the MFH units.

No adverse effects on prime farmland would be expected as a result of implementing the Proposed Action. Construction of new MFH units would occur in existing currently developed neighborhoods. By definition, an area that is designated as prime farmland has to be available for agricultural uses. The location for proposed renovation, demolition, and construction of new housing units is currently developed and not available for agricultural uses.

4.5.3 No Action Alternative

The No Action Alternative would result in continuation of the existing geological conditions and their associated impacts, as discussed in **Section 3.5.2**. No additional effects would be expected as a result of the Proposed Action not being implemented.

4.6 Water Resources

4.6.1 Evaluation Criteria

Evaluation criteria for impacts on water resources are based on water availability, quality, and use; existence of floodplains; and associated regulations. The Proposed Action would have adverse effects if it were to do one or more of the following:

- Reduce water availability or supply to existing users
- Overdraft groundwater basins
- Exceed safe annual yield of water supply sources
- Affect water quality adversely
- Endanger public health by creating or worsening health hazard conditions
- Threaten or damage unique hydrologic characteristics
- Violate established laws or regulations adopted to protect water resources.

The effect of flood hazards on a proposed action is important if such an action is in an area with a high probability of flooding.

4.6.2 Proposed Action

Short-term adverse effects on groundwater and surface water resources from construction and demolition are expected as a result of the Proposed Action. Long-term indirect beneficial effects on groundwater and surface water resources would be expected as a result of the reduction of impervious surfaces. No effects on floodplains would be expected. Potable water procurement for privatized MFH would be the responsibility of the MFH Privatization Contractor.

Direct short-term minor adverse effects from construction and demolition activities could result due to increased sediment in storm water runoff conveyed to surface water bodies (Meetinghouse Branch, Payne's Branch, and Henson Creek). Surface water runoff resulting from construction activities might include contaminants that could impact surface water quality in drainage channels and could also impact groundwater quality as a result of infiltration of contaminated runoff. The level of disturbance is related to the type of contaminant that enters the water system. Increased sediment runoff from construction and demolition activities increases surface water turbidity, which can raise water temperature and impede photosynthetic processes. Sediment runoff into surface water bodies also increases the likelihood of contaminant (e.g., heavy metals, excess nutrient concentrations) deposition on the substrate of receiving water bodies.

The Proposed Action would comply with COMAR 26.08.02, *Surface Water Quality Standards*; COMAR 26.17.01, *Erosion and Sediment Control Guidelines for State and Federal Projects*; and COMAR 26.17.02, *Storm Water Management Guidelines for State and Federal Projects*. By reference, 40 CFR Part 122 regarding NPDES permitting is incorporated into COMAR 26.17.02. Adherence to proper engineering practices and applicable codes, ordinances, and plans would reduce storm water runoff-related impacts to a level of insignificance. The Proposed Action would require a Maryland NPDES General Permit for Construction Activity (required for construction disturbances that are greater than 1 acre), Sediment and Erosion Control Plan, and Storm Water Management Plan. Erosion and sedimentation controls would be in place during construction to reduce and control siltation or erosion impacts on areas outside of the construction site (refer to **Section 4.5.2** for detailed discussion of sediment- and erosion-control procedures). Overall, construction activities would have the potential for adverse effects on surface water quality, but the development of a site-specific SWPPP as a component of the NPDES Permit for General Construction Activity would minimize adverse effects. It is expected that water quality in Meetinghouse Branch, Payne's Branch, and Henson Creek would be comparable to preconstruction conditions following full implementation of the Proposed Action.

Indirect long-term minor beneficial effects would result from the overall decrease in impervious surfaces (e.g., rooftops, parking lots, sidewalks) at Andrews AFB because the number of MFH units would be reduced by roughly half. Impervious surfaces are constructed of impenetrable materials (e.g., stone, asphalt, concrete) that repel water and prevent rainfall or snowmelt from infiltrating soils. Therefore, during rainfall or snowmelt events, impervious surfaces increase the volume and accelerate the speed at which water is directed into receiving surface water bodies. The potential for storm water to carry contaminants directly into surface waters is lessened when impervious areas decrease. Less storm water runoff would have a long-term direct minor beneficial effect on surface water and groundwater quality in MFH areas.

Several of the proposed parcels occur along Meetinghouse Branch adjacent to the 100-year floodplain. It is not anticipated that implementation of the Proposed Action would result in construction or further development in the 100-year floodplain. Therefore, no direct or indirect impacts would be expected on the 100-year floodplain.

4.6.3 No Action Alternative

The No Action Alternative would result in continuation of the existing water conditions and their associated impacts, as discussed in **Section 3.6.2**. No additional effects on water resources would be expected as a result of the Proposed Action not being implemented.

4.7 Biological Resources

4.7.1 Evaluation Criteria

This section evaluates the potential effects on biological resources under the Proposed Action and the No Action Alternative. The significance of effects on biological resources is based on (1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, (2) the proportion of the resource that would be affected relative to its occurrence in the region, (3) the sensitivity of the resource to the proposed activities, and (4) the duration of ecological ramifications. Due to the large area under consideration associated with the Proposed Action, a landscape perspective will provide a framework for analysis of general classes of effects (i.e., removal of critical habitat, human disturbance). The impacts on biological resources are significant if species or habitats of high concern are adversely affected over relatively large areas. Impacts are also considered significant if disturbances cause reductions in population size or distribution of a species of high concern.

Under the ESA, Federal agencies are required to provide documentation that ensures that agency actions will not adversely affect the existence of any threatened or endangered species. The ESA requires that all Federal agencies avoid “taking” threatened or endangered species (which includes jeopardizing threatened or endangered species habitat). If an agency determines that a federally listed species might be affected by a proposed action, then formal consultation with USFWS is initiated. The ESA establishes a consultation process with USFWS that concludes with USFWS concurrence or a determination of the risk of jeopardy from a Federal agency project.

The significance of impacts on wetland resources is proportional to the functions and values of the wetland complex. Wetlands function as habitat for plant and wildlife populations, including threatened and endangered species that depend on wetlands for their survival. Wetlands are valuable to the public for flood mitigation, storm runoff abatement, aquifer recharge, water quality improvement, and aesthetics. On a global scale, wetlands are significant factors in the nitrogen, sulfur, methane, and carbon dioxide cycles. These parameters vary from year to year and from season to season. Quantification of wetland functions and values is based on the ecological quality of the site as compared with similar sites, and the comparison of the economic value of the proposed activity that would modify the habitat. A significant adverse impact on wetlands would occur if the major functions or values of the wetland were significantly altered.

4.7.2 Proposed Action

Vegetation. Short-term and long-term direct minor adverse effects on vegetation would be expected from the Proposed Action. No vegetation disturbance would result from renovation activities or from conveyance of MFH units for use in their current condition. Limited vegetation disturbance would be expected in the landscaped areas adjacent to demolition project sites. Road design and use of BMPs to reduce effects on soils and vegetation should limit the intensity, duration, and extent of these impacts. Native species would be used to replace any removal or destruction of vegetation, as well as any new landscaping or planting.

Forest management areas on the installation do exist on and around the housing property and potential demolition and construction of new housing units and roads could lead to the removal of portions of these areas. Andrews AFB has a Forest Stewardship Plan and Urban Management Plan in place to properly assess this situation. In the event that portions of forest management areas are removed or destroyed, native species would be used to replace vegetation, as well as used for any new landscaping or planting. The possible creation of new green space could lead to long-term moderate increase in forest management areas.

Wildlife. Short-term negligible to minor adverse effects on wildlife would be expected. Wildlife habitat within the improved areas of the installation is limited due to fragmentation by the existing facilities, roads, and impervious surfaces at Andrews AFB. No wildlife disturbance would result from renovation activities or from conveyance of MFH units for “as is” use. Limited disturbance of wildlife around the demolition and new construction areas would be expected.

Threatened and Endangered Species. The federally listed sandplain gerardia and the bald eagle have been documented to occur on the main installation. The sandplain gerardia has not been documented in the vicinity of the MFH parcels. The occurrence of bald eagles on the main installation is expected to be transient in nature due to a lack of suitable foraging habitat. No bald eagle nests have been documented on the installation. Therefore, no effects on either of these federally protected species are expected as a result of implementing the Proposed Action. Implementation of the Proposed Action is not likely to adversely affect the continued existence of either of these species.

It is USAF policy to protect state-listed and other rare species where possible. Swollen bladderwort, a state watch list species has been documented southwest of the Belle Chance parcel associated with the nearby ponds and adjacent wetlands. This species is aquatic and would not be expected outside the ponds and wetlands, both of which are outside the boundaries of the Belle Chance parcel. Furthermore, swollen bladderwort was not observed during the 2004 rare and protected species survey (AAFB 2005c). The Proposed Action would not be expected to adversely affect the continued existence of this species. No other state-protected or rare species would be expected to occur in the vicinity of the Proposed Action.

Wetlands. Negligible effects on wetland habitats would be expected. There are wetlands bordering the southern MFH area, specifically along the western side of the existing housing area. Wetlands border and dissect the western edge, but do not intrude into the housing communities and therefore should not be affected by the Proposed Action. The wetlands nearest the Belle Chance parcel are adjacent to the tributary below the pond, approximately 200 feet away from the main residence (Building 1966) and should not be affected by the Proposed Action. Therefore, no direct adverse effects on wetlands are expected at Andrews AFB as a result of implementing the Proposed Action.

Implementation of properly designed and maintained erosion and sediment controls and storm water management practices, both during demolition and construction, and prior to final site stabilization, would minimize potential for any adverse effects on wetlands occurring in proximity to the MFH areas. BMPs would be implemented consistent with requirements and guidelines established in the *Maryland Erosion and Sediment Control Guidelines for State and Federal Projects* (COMAR 26.17.01) and the *Maryland Storm Water Management Guidelines for State and Federal Projects* (COMAR 26.17.02) and would minimize the potential for adverse effects associated with runoff from the construction sites. **Sections 4.5.2 and 4.6.2** of this EA provides a more in-depth discussion of Maryland’s erosion and sediment control and storm water management regulations.

4.7.3 No Action Alternative

The No Action Alternative would result in continuation of the existing biological conditions and their associated impacts, as discussed in **Section 3.7.2**. No additional effects would be expected as a result of the Proposed Action not being implemented. Presently, there are no impacts from areas adjacent to the MFH parcels.

4.8 Cultural Resources

4.8.1 Evaluation Criteria

Under the NHPA, Federal agencies are required to provide documentation that the agency has considered the impacts of any proposed undertakings on historic properties. The NHPA establishes a consultation process with the SHPO, the Tribal Historical Preservation Office or tribal representatives of federally recognized tribes, and other interested parties that concludes with SHPO or Tribal Historic Preservation Office concurrence regarding the nature of any effect on historic properties and any required mitigation measures to be enacted to avoid or minimize that effect.

This section evaluates the potential effects on historic properties under the Proposed Action and the No Action Alternative. The only NRHP-eligible resources recorded within the parcels to be conveyed to the Project Owner (PO) are the buildings at Belle Chance (Buildings 1966, 1967, and 1968) and the historic component of archeological site 18PR447; consultation with the Trust regarding these resources is in **Appendix D**. Should implementation of either alternative result in the inadvertent discovery of archeological materials, human remains, or items of cultural patrimony (other than archeological materials), impacts on such resources might also be considered significant. Finally, although no communities, including Native American tribes, have identified traditional cultural properties (TCPs) within Andrews AFB, there is always the potential for identification of such resources in the future. The significance of impacts on TCPs would need to be determined in consultation with the affected community(s).

4.8.2 Proposed Action

Any transfer, lease, or sale of a historic property (or portion thereof) to a non-Federal party is considered an adverse effect under the NHPA. However, this process can be considered to have no adverse effect on the property under 36 CFR 800.9 (c) (3) if “adequate restrictions or conditions are included to ensure preservation of the property’s significant historic features.” In consultation with the Trust, the USAF has prepared a Preservation Covenant to protect and preserve the historic integrity of Belle Chance during the rehabilitation, operation, and maintenance of the residence by the PO. No disturbance of Site 18PR447 will be permitted while the property is under lease to the PO without consultation.

Andrews AFB has an ICRMP (2003–2007) that contains detailed information about cultural resource management, including the plans that are in place in the event of inadvertent discoveries of human remains or archeological materials, and guidance for the maintenance and treatment of historic buildings. Under the Proposed Action, all projects would be implemented in accordance with the guidelines set forth in the ICRMP. The ICRMP is administered by the Andrews AFB Cultural Resources Manager.

Archeological Resources. All of the land proposed for leasing to the PO has been surveyed for archeological resources, and only one NRHP-eligible archeological site (18PR447) has been identified. The Trust has concurred with that assessment (**Table 3-6**). Under the Proposed Action, no disturbance of Site 18PR447 will be allowed under the terms of the transfer from the Air Force to the PO. Consultation

between the USAF and the Trust to ensure the preservation of these resources is included in **Appendix D**. The Proposed Action, including the lease of a portion of Site 18 PR447 subject protective provisions, would have no adverse effect on archeological resources (Site 18PR447).

However, it is possible that operations and maintenance under the Proposed Action might result in an accidental discovery of archeological artifacts. In the event of a discovery during construction, all work in the immediate vicinity of the discovery would be halted until the resources are identified and documented and an appropriate mitigation strategy developed in consultation with the SHPO and other consulting parties. As outlined in the ICRMP, and in compliance with Federal laws (e.g., NHPA, ARPA, and NAGPRA), concerned parties would be notified and consulted about the proposed treatment of funerary and sacred objects should these be discovered during implementation of the Proposed Action. The deed and lease provisions for Belle Chance would require the PO to immediately notify the Commander of Andrews AFB of any discoveries and protect the site from further disturbance until the Commander has given clearance to continue work.

Architectural Resources. The three buildings that comprise the Belle Chance parcel are historic buildings that have been determined eligible for listing in the NRHP. The Air Force has consulted with the Trust to develop a Preservation Covenant that will be included in the conveyance to the developer to ensure protection of these historic structures. On February 21, 2007, the USAF sent a draft letter agreement to the Trust containing the proposed Preservation Covenant and other provisions to provide for the long-term preservation and maintenance of Belle Chance in a manner consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. The final agreement is included in **Appendix D** of this EA.

Under the Preservation Covenant contained in the deed to Belle Chance, the historical character the property will be retained and preserved. Exterior additions to Belle Chance are not considered within the scope of this Proposed Action but would be the subject of consultation between the PO and the Trust. The PO will perform all work on Belle Chance in consultation with the Trust. The Preservation Covenant will satisfy the provisions of 36 CFR 800.5 by providing for adequate and legally enforceable restrictions to ensure the long-term preservation of the Belle Chance's historic significance upon the lease of the property out of Federal ownership or control. Therefore, a conveyance of Belle Chance subject to the Preservation Covenant would result in no adverse effects on the historical integrity of Belle Chance. Consultation between the USAF and the Trust regarding Belle Chance is included as **Appendix D**.

The Air Force has not identified any historic buildings, structures, or districts lie outside of Andrews AFB adjacent to the areas where existing buildings would be demolished and new buildings constructed. In the event that demolition or construction is identified to potentially impact the viewshed or setting of NRHP-eligible buildings, structures, or districts, the PO would consult with the Trust to determine the specific effects associated with the project APE for the Proposed Action.

TCPs. To date, no TCPs have been identified at Andrews AFB. It is unlikely that implementation of the Proposed Action would have an effect on this category of properties since there would be no new ground disturbance for the MFH units on Andrews AFB and no new visual impacts. To ensure this, Andrews AFB should consult with federally recognized Native American tribes and other interested communities near the installation regarding specific projects undertaken as part of the Proposed Action.

In the event of an inadvertent discovery of human remains during demolition, all work in the immediate vicinity of the discovery would be halted until the resources are identified and documented and an appropriate mitigation strategy developed in consultation with the Trust and other consulting parties. As specified in the ICRMP and in compliance with Federal laws (APRA, NHPA, and NAGPRA), concerned

tribal representatives would be notified and consulted about the proposed treatment of human remains should these be discovered during implementation of the Proposed Action.

4.8.3 No Action Alternative

The No Action Alternative would result in continuation of the existing cultural conditions and their associated impacts, as discussed in **Section 3.8.2**. No additional effects on cultural resources would be expected as a result of the Proposed Action not being implemented.

4.9 Socioeconomics and Environmental Justice

4.9.1 Evaluation Criteria

The significance of construction expenditure impacts is assessed in terms of direct effects on the local economy and related effects on other socioeconomic resources (e.g., housing). The magnitude of potential impacts can vary greatly, depending on the location of a proposed action. For example, implementation of an action that creates ten employment positions might be unnoticed in an urban area, but could have significant impacts in a rural community. If potential socioeconomic changes were to result in substantial shifts in population trends or in adverse effects on regional spending and earning patterns, they would be considered significant.

This section identifies potential economic and social impacts that might result from the Proposed Action. The methodology for the economic impact assessment is based on the Economic Impact Forecast System (EIFS) developed by the DOD in the 1970s to efficiently identify and address the regional economic effects of proposed military actions (EIFS 2001). EIFS provides a standardized system to quantify the impact of military actions and to compare various options or alternatives in a standard, nonarbitrary approach. The EIFS assesses potential impacts on four principal indicators of regional economic impact: business volume, employment, personal income, and population. As a “first tier” approximation of effects and their significance, these four indicators have proven very effective. The methodology for social impacts is based on the *Guidelines and Principles for Social Impact Assessment*, developed by an interorganizational committee of experts in their field (NOAA 1994). Finally, this section also evaluates environmental justice concerns to include disproportionate impacts on low-income or minority populations.

4.9.2 Proposed Action

Long-term and short-term, minor beneficial effects would be expected on socioeconomic resources; no effects would be expected on environmental justice.

Employment and Economic Characteristics. No significant effects would be expected on employment levels, household income, or poverty level. There would be a minor short-term increase in employment related to MFH construction, demolition, and renovation activities on the installation. The use of local labor would have short-term, beneficial impacts on the local economy, but would have negligible long-term effects. Household income and poverty levels would not be affected by the Proposed Action, the essence of which concerns real estate development. In addition, the proposed renovation, demolition, and construction activities would provide short-term beneficial effects by employing workers.

Census data for 2000 showed that there are 939 and 23,612 employees working in the construction industry within the ROI and Prince George’s County, respectively (U.S. Census Bureau 2000). The number of construction workers required for the proposed construction projects is relatively small

compared to the available work force in the ROI and the county, and should be adequate without impacting local employment. Purchase of construction materials and related supplies and services from local suppliers would generate additional income to the local economy.

Demolition and Construction. Short-term minor beneficial effects would be expected from increased employment. Demolition and construction activities under the Proposed Action would provide beneficial economic consequences for the Prince George's County area. Local labor and supplies would be needed to complete construction of the new housing units.

Education. No effects on education would be expected as a result of the Proposed Action. The existing students would continue to attend their current schools, although their transportation between school and home would change during the MFH demolition and renovation activities.

Housing. Long-term beneficial effects would be expected under the Proposed Action. Renovation and timely maintenance of the existing MFH units would increase their value.

Environmental Justice. No effects would be expected. The Proposed Action would occur principally on Andrews AFB. Off-installation minority and low-income populations, limited in size and proximity to the installation, would not be adversely or disproportionately affected by the Proposed Action.

4.9.3 No Action Alternative

The No Action Alternative would result in continuation of the existing socioeconomic conditions and their impacts, as discussed in **Section 3.9.2**. No additional effects would be expected as a result of the Proposed Action not being implemented.

4.10 Infrastructure

4.10.1 Evaluation Criteria

Effects on infrastructure are evaluated based on their potential for disruption or improvement of existing levels of service and additional needs for energy and water consumption, sanitary sewer and wastewater systems, and transportation patterns and circulation. Impacts might arise from physical changes to circulation, construction activities, introduction of construction-related traffic on local roads or changes in daily or peak-hour traffic volumes, and energy needs created by either direct or indirect workforce and population changes related to installation activities. In considering the basis for evaluating the significance of impacts on solid waste, several items are considered. These items include evaluating the degree to which the proposed construction projects could affect the existing solid waste management program and capacity of the area landfill. An effect might be considered adverse if a proposed action exceeded capacity of a utility.

4.10.2 Proposed Action

Transportation Network. Short-term minor adverse impacts on the transportation network would occur under the Proposed Action because of increased construction traffic. However, increased traffic congestion is considered minor because its duration would last only during the completion of construction, renovation, and demolition activities. The proposed MFH demolition, renovation, and construction activities would impact vehicle traffic flows on- and off-installation until the project is completed. Construction related traffic would comprise a small percentage of the total existing on- and off-installation traffic and many of the construction vehicles would be driven to and kept onsite for the

duration of the MFH demolition, renovation, and construction, resulting in relatively few additional trips. Furthermore, potential increases in traffic volume associated with proposed demolition, renovation, and construction activities would be temporary. Heavy vehicles are frequently used on installation roads. Any short-term road closures associated with the Proposed Action would be handled by 316 WG's Logistics Readiness Squadron, which provides traffic management on the installation (AAFB 2003a). Therefore, no significant adverse impacts on transportation systems would be expected.

Electricity, Central Heating and Natural Gas, Communications, Potable Water Supply, and Sanitary Systems and Wastewater. Long-term direct minor beneficial effects on electrical, central heating and natural gas, communications, potable water supply, and sanitary sewer and wastewater systems would be expected. The Proposed Action would result in a decrease of 593 MFH units on the installation; therefore, there would be a decrease in demand of installation utility systems. Construction, renovation, and demolition activities are not expected to disrupt services or cause any short-term effects.

The natural gas, potable water supply, and sanitary sewer systems at Andrews AFB are privately owned, operated, and maintained through private agreements. These systems would not be conveyed under the Proposed Action.

Solid Waste. Short-term minor adverse effects and long-term negligible beneficial effects on solid waste management would be expected under the Proposed Action.

Solid waste generated from the proposed construction would consist of building materials such as concrete, metals (conduit, piping, and wiring), brick, drywall, glass, roofing, paint, carpets, and wood. In accordance with Andrews AFB policy, contractors "shall recycle all solid wastes, trash, rubbish, debris (including construction and demolition debris), and garbage as is practicable at an off-site location" (AAFB 2003a). Contractors are also obligated through installation policy to provide the Contracting Office with the type and amount (weight) of materials recycled and their location.

As shown in **Table 4-3** approximately 84,188 tons of C&D debris would be generated as a result of the Proposed Action. The C&D debris quantities are based on standard generation rates using the square footage of the existing MFH units (USEPA 1998). The contractor would recycle C&D materials to the greatest extent possible; however, it is assumed that the vast majority of the C&D debris would contain

Table 4-3. Total C&D Debris Generated from the Proposed Action

Project	Floor Area (ft ²)	Multiplier (pounds/ft ²)	C&D Debris Generated	
			(pounds)	(tons)
Building Construction ^a	498,714	4.38	2,184,367	1,092
Building Renovation ^b	226,570	18	4,078,260	2,039
Building Demolition ^c	1,276,500	127	162,115,500	81,057
Total			168,378,127	84,188

Source: Estimated using USEPA 1998

Notes:

ft² = square feet

^a Construction includes 258 units with an average floor area of approximately 1,933 ft²

^b Renovation includes 139 units with an average floor area of approximately 1,630 ft²

^c Demolition includes 851 units with an average floor area of approximately 1,500 ft²

nails, rebar, or other building materials that would limit recycling. The contractor would be responsible for disposal of nonrecyclable C&D debris at an off-site permitted facility. The only landfill in Prince George's County is the Brown Station Road Sanitary Landfill. This landfill operates hazardous waste disposal, recycling, and solid waste disposal. The off-site permitted landfill for C&D materials has yet to be determined.

Following renovation, demolition, and construction activities, long-term negligible beneficial effects on solid waste management would result from the decrease in the quantities of MSW and recyclables generated from the MFH units due to the reduction of 593 MFH units. All MSW generated at the MFH units would be managed by the private developer in accordance with the operational provisions of the MFH agreements.

4.10.3 No Action Alternative

The No Action Alternative would result in continuation of the existing infrastructure conditions and their impacts, as discussed in **Section 3.10.2**. No additional effects would be expected as a result of the Proposed Action not being implemented.

4.11 Hazardous Materials and Wastes

4.11.1 Evaluation Criteria

Effects on hazardous materials and wastes would be considered adverse if the Federal action resulted in noncompliance with applicable Federal or state regulations, or increased the amounts generated or procured beyond current Andrews AFB waste management procedures and capacities.

Impacts on pollution prevention would be considered adverse if the Federal action resulted in worker, resident, or visitor exposure to these materials, or if the action generated quantities of these materials beyond the capability of current management procedures. Impacts on the ERP would be considered adverse if the action disturbed (or created) contaminated sites resulting in negative effects on human health or the environment, or if the action made it more difficult or costly to remediate existing contaminated sites. Additional adverse impacts include actions that make it more difficult or costly to remediate hazardous waste or POL sites.

4.11.2 Proposed Action

Hazardous Materials. Short-term minor adverse effects would be expected due to increased hazardous materials use. Products containing hazardous materials would be procured and used during the proposed MFH demolition, renovation, and construction activities. It is anticipated that the quantity of products containing hazardous materials used during the construction, renovation, and demolition activities would be minimal and their use would be of short duration. Contractors would be responsible for the management of hazardous materials, which would be handled in accordance with Federal and state regulations. The private developer would be responsible for the long-term storing, handling, and disposal of the hazardous materials utilized for MFH maintenance in accordance with Federal and state regulations.

Hazardous Wastes. Minor short-term effects would be expected. It is anticipated that the quantity of hazardous wastes generated from proposed MFH demolition, renovation, and construction activities would be minor, primarily consisting of used hazardous materials and removal of LBP or ACM in building materials. Contractors would be responsible for the disposal of hazardous wastes generated

during construction, renovation, and demolition activities in accordance with Federal and state regulations. The private developer would be responsible for the long-term storing, handling, and disposal of the hazardous wastes generated for MFH maintenance in accordance with Federal and state regulations.

Storage Tanks. No effects from the Proposed Action would be expected on the remaining storage tanks. Andrews AFB is in the process of removing storage tanks present in the MFH; therefore, the Proposed Action would not be expected to affect any storage tanks at Andrews AFB. However, should storage tanks be encountered, the management and closure activities would be conducted in accordance with applicable Federal, state, and local regulations and AFIs. With the use of heavy equipment and other construction machinery, the PO would likely require the use of a fueling service or decide to use temporary ASTs. If the PO chooses to use temporary ASTs, all applicable Federal, state, local, and USAF regulations would be followed. In either case, short-term minor adverse effects would be expected. The use of fuel delivery trucks and ASTs increase the probability of incidents resulting in release.

Pollution Prevention. It is anticipated that the Proposed Action would result in short-term minor adverse effects on the Andrews AFB Pollution Prevention Program. Quantities of hazardous material and chemical purchases, off-installation transport of hazardous waste, disposal of MSW, and energy consumption would increase during the MFH demolition, renovation, and construction activities. However, the Andrews AFB Pollution Prevention Program can accommodate the Proposed Action.

Environmental Restoration Program. Short-term adverse effects as a result of exposure to diesel fumes could occur during construction activities. ST-19 is within the MFH parcels. The Proposed Action should not interfere with access for future sampling or abandonment at the remaining open ERP sites. No further response action is planned for ST-18. MDE is issuing a closure letter for this site (89 PA 2006b). Further sampling and investigation of SWMUs 69 and 75 are anticipated in the future.

Asbestos-Containing Materials. Short-term minor adverse and long-term minor beneficial effects would be expected. Some of the buildings scheduled for demolition or renovation might have ACM. As mentioned previously, units in Parcels E, F, K, I, and L have been found or are expected to have their foundations poured on asbestos-containing ductwork used for the HVAC system. The demolition of concrete typically involves the use of heavy equipment. Caution and adherence to asbestos-removal regulations and guidelines should be followed by the PO. Sampling for ACM would occur prior to demolition or renovation activities and would be handled in accordance with the Facility Asbestos Management Plan and USAF policy. If disturbance of these materials becomes necessary, properly trained personnel using the proper protective equipment would abate the material; disposing of it in the manner prescribed by current environmental regulations. Sampling, removal, and disposal of any ACM would be short-term in duration.

Specifications for the proposed renovation activities and USAF regulations prohibit the use of ACM for new construction. Therefore, some building materials containing asbestos would be replaced with new materials without asbestos. The new materials without asbestos would provide long-term beneficial effects of less asbestos in MFH areas.

Lead-Based Paint. Short-term minor adverse and long-term minor beneficial effects would be expected. Some of the buildings scheduled for demolition or renovation contain LBP. Sampling for LBP would occur prior to demolition or renovation activities and would be handled in accordance with the Andrews AFB Integrated Lead-Based Paint Management Plan and USAF policy. If disturbance of these materials becomes necessary, properly trained personnel using the proper protective equipment would

abate the material; disposing it in the manner prescribed by current environmental regulations. Sampling, removal, and disposal of any materials with LBP would be short-term in duration.

Specifications for the proposed renovation activities and USAF regulations prohibit the use of LBP for new construction. Therefore, some building materials with LBP might be replaced with new materials not covered with LBP. The new materials without LBP would provide long-term beneficial effects of less LBP in MFH areas.

Radon. No effects would be expected. Although radon is typically found to collect in basements, EDR indicates that nearly 6 percent of the homes tested in Prince George's County had radon concentrations greater than 4 pCi/L. If radon levels were above the action level, mitigation would be enacted. Therefore, implementation of the Proposed Action would have no significant effect on radon.

Polychlorinated Biphenyls. No effects from PCBs would be expected. All of the transformers within the Andrews AFB MFH areas are non-PCB transformers and other sources of PCBs have been removed (AMC 2004). However, possible sources of PCBs in the MFH areas include transformers containing less than 50 ppm PCBs, electrical light ballasts, capacitors, and surge protectors.

Mold. Short-term minor adverse and long-term minor beneficial effects could be expected. Demolition or renovation of any moldy areas in the MFH areas would require the use of proper protective equipment and could delay demolition and renovation efforts. However, removal of the moldy building materials and repair of water leaks or moisture accumulation areas would assist in preventing future mold problems.

Ordnance. No effects would be expected. There is no known ordnance within the MFH areas.

4.11.3 No Action Alternative

The No Action Alternative would result in continuation of the existing hazardous materials and waste conditions and their associated impacts, as discussed in **Section 3.11.2**. No additional effects would be expected as a result of the Proposed Action not being implemented.

5. Cumulative Effects

CEQ defines cumulative effects as the “impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions” (40 CFR 1508.7.). Although individual impacts of various actions might be minor, taken together their effects could be significant.

Impacts subject to cumulative effects analysis are identified by reference to the temporal span and spatial area in which the Proposed Action could cause effects. It is estimated that the construction and demolition of MFH would occur over 6 years. For the purposes of this analysis, the temporal span of the Proposed Action includes projects reasonably foreseeable during the 6-year construction and demolition period. For most resources, the spatial area for consideration of cumulative effects is Andrews AFB, and more specifically, the western portion of Andrews AFB, near the MFH, farmhouse, and Belle Chance parcels.

The essence of the Proposed Action is redevelopment (i.e., demolition, renovation, road construction, use, and maintenance of MFH on the installation). Projects near the MFH and Belle Chance parcels include the following:

- Construction of a Town Center in what is currently MFH Parcels N, O, P, Q, R, and S (bounded on the north by Menoher Drive, on the east by Virginia Avenue, on the south by San Antonio Boulevard, and on the west by Tuskegee Drive). The Town Center would include a library and education center, a fitness center, temporary lodging facilities, a commissary, a base exchange, and other community functions. This type of land use would be compatible adjacent to MFH.
- Construction of the National Capital Region Mission Planning Center immediately east of MFH Parcel A and north of Parcels B and N. Following demolition of the existing Visiting Quarters, the Mission Planning Center would be constructed facing Menoher Drive and California Road. Specific components of this project include a conference center (34,500 square feet), lodging and dining facility (25,000 square feet), a fitness center (20,000 square feet), and parking for 500 vehicles. This type of land use would be compatible adjacent to MFH.

An Installation Development Environmental Assessment (IDEA) is being prepared to evaluate construction, demolition, and infrastructure projects on an installation-wide level. Numerous projects analyzed in the IDEA would be expected to occur concurrent with the Proposed Action, if implemented. The MFH construction, in combination with the IDEA, would have cumulative effects on air quality. Site preparation would produce fugitive dust, and use of heavy construction equipment would produce air emissions. These effects on air quality would be limited to Andrews AFB. Effects on air quality would be of a finite duration, lasting only during the period of site preparation, demolition, and construction activities.

Projects analyzed in the IDEA would be in a variety of areas designated in the installation land use plan for airfield, airfield operations, industrial, administrative, and community uses. Many of these areas are presently developed; a substantial number of the projects would include demolition of existing old or inadequate facilities. Nevertheless, there would continue to be a small degree of removal of natural resource components of the ecological environment. That is, construction would increase impervious surfaces, possibly eliminate small portions of habitat, and require the removal of vegetation (both native and ornamental). These effects would be minor because most areas of Andrews AFB are previously disturbed. In the context of Andrews AFB, these types of cumulative effects are long-term and adverse, but minor.

Under the Proposed Action, there would be a substantial reduction in the number of MFH units for USAF and other qualified personnel. Past management practices, based on a “customer demand” philosophy, led to the existing inventory of 1,480 housing units. Implementation of the Proposed Action, reflecting a different management philosophy,³ would decrease the inventory of housing to not more than 887 units. The present action would reverse the past actions of constructing and maintaining a large on-installation MFH inventory for USAF personnel. The majority of MFH for personnel assigned to Andrews AFB would continue to be supplied by the local economy. No cumulative effects would be expected as a result of comparing the present action to historic actions leading to the installation’s relatively high inventory of MFH.

³ In a revised paradigm, the USAF analyzes its housing needs in a way that typically results in there being fewer government housing units. Now, to establish the on-base minimum housing requirement, base officials identify four key demographic areas: the number of key and essential personnel, the number of historic housing units, 10 percent of all grades (enlisted and officer), and the number of service members whose total income is less than 50 percent of the average median income in the community. Using the highest number in each of those categories by grade, the base determines its minimum on-base housing requirement, also called the “floor requirement.” The number of remaining personnel, representing those who need to be housed off base, is then compared to the availability of homes in the local community. When the community can meet the entire requirement, only the floor number is provided on base. If the community cannot provide adequate housing for those people, the number of people who cannot be housed in the local community is added to the floor requirement to get the total number of homes USAF needs to provide on base.

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APPENDIX A
MILITARY HOUSING PRIVATIZATION INITIATIVE

Appendix A

Military Housing Privatization Initiative

Title 10	Armed Forces
Subtitle A	General Military Law
Part IV	Service, Supply, and Procurement
Chapter 169	Military Construction and Military Family Housing
Subchapter IV	Alternative Authority for Acquisition and Improvement of Military Housing

Sec. 2871. Definitions

In this subchapter:

- (1) The term “ancillary supporting facilities” means facilities related to military housing units, including facilities to provide or support elementary or secondary education, child care centers, day care centers, tot lots, community centers, housing offices, dining facilities, unit offices, and other similar facilities for the support of military housing.
- (2) The term “base closure law” means the following:
 - (A) Section 2687 of this title.
 - (B) Title II of the Defense Authorization Amendments and Base Closure and Realignment Act (Public Law 100-526; 10 U.S.C. 2687 note).
 - (C) The Defense Base Closure and Realignment Act of 1990 (part A of title XXIX of Public Law 101-510; 10 U.S.C. 2687 note).
- (3) The term “construction” means the construction of military housing units and ancillary supporting facilities or the improvement or rehabilitation of existing units or ancillary supporting facilities.
- (4) The term “contract” includes any contract, lease, or other agreement entered into under the authority of this subchapter.
- (5) The term “eligible entity” means any private person, corporation, firm, partnership, company, State or local government, or housing authority of a State or local government.
- (6) The term “Fund” means the Department of Defense Family Housing Improvement Fund or the Department of Defense Military Unaccompanied Housing Improvement Fund established under section 2883(a) of this title.
- (7) The term “military unaccompanied housing” means military housing intended to be occupied by members of the armed forces serving a tour of duty unaccompanied by dependents and transient housing intended to be occupied by members of the armed forces on temporary duty.
- (8) The term “United States” includes the Commonwealth of Puerto Rico.

Sec. 2872. General authority

In addition to any other authority provided under this chapter for the acquisition or construction of military family housing or military unaccompanied housing, the Secretary concerned may exercise any

authority or any combination of authorities provided under this subchapter in order to provide for the acquisition or construction by eligible entities of the following:

- (1) Family housing units on or near military installations within the United States and its territories and possessions.
- (2) Military unaccompanied housing units on or near such military installations.

Sec. 2872a. Utilities and services

(a) Authority To Furnish. - The Secretary concerned may furnish utilities and services referred to in subsection (b) in connection with any military housing acquired or constructed pursuant to the exercise of any authority or combination of authorities under this subchapter if the military housing is located on a military installation.

(b) Covered Utilities and Services. - The utilities and services that may be furnished under subsection (a) are the following:

- (1) Electric power.
- (2) Steam.
- (3) Compressed air.
- (4) Water.
- (5) Sewage and garbage disposal.
- (6) Natural gas.
- (7) Pest control.
- (8) Snow and ice removal.
- (9) Mechanical refrigeration.
- (10) Telecommunications service.
- (11) Firefighting and fire protection services.
- (12) Police protection services.

(c) Reimbursement.

- (1) The Secretary concerned shall be reimbursed for any utilities or services furnished under subsection (a).
- (2) The amount of any cash payment received under paragraph (1) shall be credited to the appropriation or working capital account from which the cost of furnishing the utilities or services concerned was paid. Amounts so credited to an appropriation or account shall be merged with funds in such appropriation or account, and shall be available to the same extent, and subject to the same terms and conditions, as such funds.

Sec. 2873. Direct loans and loan guarantees

(a) Direct Loans.

- (1) Subject to subsection (c), the Secretary concerned may make direct loans to an eligible entity in order to provide funds to the eligible entity for the acquisition or construction of housing units that the Secretary determines are suitable for use as military family housing or as military unaccompanied housing.

- (2) The Secretary concerned shall establish such terms and conditions with respect to loans made under this subsection as the Secretary considers appropriate to protect the interests of the United States, including the period and frequency for repayment of such loans and the obligations of the obligors on such loans upon default.

(b) Loan Guarantees.

- (1) Subject to subsection (c), the Secretary concerned may guarantee a loan made to an eligible entity if the proceeds of the loan are to be used by the eligible entity to acquire, or construct housing units that the Secretary determines are suitable for use as military family housing or as military unaccompanied housing.
- (2) The amount of a guarantee on a loan that may be provided under paragraph (1) may not exceed the amount equal to the lesser of - (A) the amount equal to 80 percent of the value of the project; or (B) the amount of the outstanding principal of the loan.
- (3) The Secretary concerned shall establish such terms and conditions with respect to guarantees of loans under this subsection as the Secretary considers appropriate to protect the interests of the United States, including the rights and obligations of obligors of such loans and the rights and obligations of the United States with respect to such guarantees.

(c) Limitation on Direct Loan and Guarantee Authority. – Direct loans and loan guarantees may be made under this section only to the extent that appropriations of budget authority to cover their cost (as defined in section 502(5) of the Federal Credit Reform Act of 1990 (2 U.S.C. 661a(5))) are made in advance, or authority is otherwise provided in appropriation Acts. If such appropriation or other authority is provided, there may be established a financing account (as defined in section 502(7) of such Act (2 U.S.C. 661a(7))), which shall be available for the disbursement of direct loans or payment of claims for payment on loan guarantees under this section and for all other cash flows to and from the government as a result of direct loans and guarantees made under this section.

Sec. 2874. Leasing of housing

- (a) Lease Authorized. - The Secretary concerned may enter into contracts for the lease of housing units that the Secretary determines are suitable for use as military family housing or military unaccompanied housing.
- (b) Use of Leased Units. - The Secretary concerned shall utilize housing units leased under this section as military family housing or military unaccompanied housing, as appropriate.
- (c) Lease Terms. - A contract under this section may be for any period that the Secretary concerned determines appropriate and may provide for the owner of the leased property to operate and maintain the property.

Sec. 2875. Investments

- (a) Investments Authorized. - The Secretary concerned may make investments in an eligible entity carrying out projects for the acquisition or construction of housing units suitable for use as military family housing or as military unaccompanied housing.
- (b) Forms of Investment. - An investment under this section may take the form of an acquisition of a limited partnership interest by the United States, a purchase of stock or other equity instruments by the United States, a purchase of bonds or other debt instruments by the United States, or any combination of such forms of investment.

(c) Limitation on Value of Investment.

- (1) The cash amount of an investment under this section in an eligible entity may not exceed an amount equal to 33 1/3 percent of the capital cost (as determined by the Secretary concerned) of the project or projects that the eligible entity proposes to carry out under this section with the investment.
- (2) If the Secretary concerned conveys land or facilities to an eligible entity as all or part of an investment in the eligible entity under this section, the total value of the investment by the Secretary under this section may not exceed an amount equal to 45 percent of the capital cost (as determined by the Secretary) of the project or projects that the eligible entity proposes to carry out under this section with the investment.
- (3) In this subsection, the term “capital cost”, with respect to a project for the acquisition or construction of housing, means the total amount of the costs included in the basis of the housing for Federal income tax purposes.

(d) Collateral Incentive Agreements. - The Secretary concerned shall enter into collateral incentive agreements with eligible entities in which the Secretary makes an investment under this section to ensure that a suitable preference will be afforded members of the armed forces and their dependents in the lease or purchase, as the case may be, of a reasonable number of the housing units covered by the investment.

(e) Congressional Notification Required. - Amounts in the Department of Defense Family Housing Improvement Fund or the Department of Defense Military Unaccompanied Housing Improvement Fund may be used to make a cash investment under this section in an eligible entity only after the end of the 30-day period beginning on the date the Secretary of Defense submits written notice of, and justification for, the investment to the appropriate committees of Congress.

Sec. 2876. Rental guarantees

The Secretary concerned may enter into agreements with eligible entities that acquire or construct military family housing units or military unaccompanied housing units under this subchapter in order to assure –

- (1) the occupancy of such units at levels specified in the agreements; or
- (2) rental income derived from rental of such units at levels specified in the agreements.

Sec. 2877. Differential lease payments

Pursuant to an agreement entered into by the Secretary concerned and a lessor of military family housing or military unaccompanied housing to members of the armed forces, the Secretary may pay the lessor an amount in addition to the rental payments for the housing made by the members as the Secretary determines appropriate to encourage the lessor to make the housing available to members of the armed forces as military family housing or as military unaccompanied housing.

Sec. 2878. Conveyance or lease of existing property and facilities

(a) Conveyance or Lease Authorized. - The Secretary concerned may convey or lease property or facilities (including ancillary supporting facilities) to eligible entities for purposes of using the proceeds of such conveyance or lease to carry out activities under this subchapter.

(b) Inapplicability to Property at Installation Approved for Closure. - The authority of this section does not apply to property or facilities located on or near a military installation approved for closure under a base closure law.

(c) Terms and Conditions.

- (1) The conveyance or lease of property or facilities under this section shall be for such consideration and upon such terms and conditions as the Secretary concerned considers appropriate for the purposes of this subchapter and to protect the interests of the United States.
- (2) As part or all of the consideration for a conveyance or lease under this section, the purchaser or lessor (as the case may be) shall enter into an agreement with the Secretary to ensure that a suitable preference will be afforded members of the armed forces and their dependents in the lease or sublease of a reasonable number of the housing units covered by the conveyance or lease, as the case may be, or in the lease of other suitable housing units made available by the purchaser or lessee.

(d) Inapplicability of Certain Property Management Laws. – The conveyance or lease of property or facilities under this section shall not be subject to the following provisions of law:

- (1) Section 2667 of this title.
- (2) Subtitle I of title 40 and title III of the Federal Property and Administrative Services Act of 1949 (41 U.S.C. 251 et seq.).
- (3) Section 1302 of title 40.
- (4) Section 501 of the McKinney-Vento Homeless Assistance Act (42 U.S.C. 11411).

Sec. 2879.

(Repealed. Public Law 107-314, div. B, title XXVIII, Sec. 2802(c)(1), Dec. 2, 2002, 116 Stat. 2703)

Sec. 2880. Unit size and type

(a) Conformity With Similar Housing Units in Locale. – The Secretary concerned shall ensure that the room patterns and floor areas of military family housing units and military unaccompanied housing units acquired or constructed under this subchapter are generally comparable to the room patterns and floor areas of similar housing units in the locality concerned.

(b) Inapplicability of Limitations on Space by Pay Grade.

- (1) Section 2826 of this title shall not apply to military family housing units acquired or constructed under this subchapter.
- (2) The regulations prescribed under section 2856 of this title shall not apply to any military unaccompanied housing unit acquired or constructed under this subchapter unless the unit is located on a military installation.

Sec. 2881. Ancillary supporting facilities

(a) Authority To Acquire or Construct. - Any project for the acquisition or construction of military family housing units or military unaccompanied housing units under this subchapter may include the acquisition or construction of ancillary supporting facilities for the housing units concerned.

(b) Restriction. - A project referred to in subsection (a) may not include the acquisition or construction of an ancillary supporting facility if, as determined by the Secretary concerned, the facility is to be used for providing merchandise or services in direct competition with -

- (1) the Army and Air Force Exchange Service;
- (2) the Navy Exchange Service Command;

- (3) a Marine Corps exchange;
- (4) the Defense Commissary Agency; or
- (5) any nonappropriated fund activity of the Department of Defense for the morale, welfare, and recreation of members of the armed forces.

Sec. 2881a. Pilot projects for acquisition or construction of military unaccompanied housing

(a) Pilot Projects Authorized. - The Secretary of the Navy may carry out not more than three pilot projects under the authority of this section or another provision of this subchapter to use the private sector for the acquisition or construction of military unaccompanied housing in the United States, including any territory or possession of the United States.

(b) Treatment of Housing; Assignment of Members. - The Secretary of the Navy may assign members of the armed forces without dependents to housing units acquired or constructed under the pilot projects, and such housing units shall be considered as quarters of the United States or a housing facility under the jurisdiction of the Secretary for purposes of section 403 of title 37.

(c) Basic Allowance for Housing.

- (1) The Secretary of Defense may prescribe and, under section 403(n) of title 37, pay for members of the armed forces without dependents in privatized housing acquired or constructed under the pilot projects higher rates of partial basic allowance for housing than the rates authorized under paragraph (2) of such section.
- (2) The partial basic allowance for housing paid for a member at a higher rate under this subsection may be paid directly to the private sector source of the housing to whom the member is obligated to pay rent or other charge for residing in such housing if the private sector source credits the amount so paid against the amount owed by the member for the rent or other charge.

(d) Funding.

- (1) The Secretary of the Navy shall use the Department of Defense Military Unaccompanied Housing Improvement Fund to carry out activities under the pilot projects.
- (2) Subject to 90 days prior notification to the appropriate committees of Congress, such additional amounts as the Secretary of Defense considers necessary may be transferred to the Department of Defense Military Unaccompanied Housing Improvement Fund from amounts appropriated for construction of military unaccompanied housing in military construction accounts. The amounts so transferred shall be merged with and be available for the same purposes and for the same period of time as amounts appropriated directly to the Fund.

(e) Reports.

- (1) The Secretary of the Navy shall transmit to the appropriate committees of Congress a report describing –
 - (A) each contract for the acquisition of military unaccompanied housing that the Secretary proposes to solicit under the pilot projects;
 - (B) each conveyance or lease proposed under section 2878 of this title in furtherance of the pilot projects; and
 - (C) the proposed partial basic allowance for housing rates for each contract as they vary by grade of the member and how they compare to basic allowance for housing rates for other contracts written under the authority of the pilot programs.

- (2) The report shall describe the proposed contract, conveyance, or lease and the intended method of participation of the United States in the contract, conveyance, or lease and provide a justification of such method of participation. The report shall be submitted not later than 90 days before the date on which the Secretary issues the contract solicitation or offers the conveyance or lease.

(f) Expiration. - Notwithstanding section 2885 of this title, the authority of the Secretary of the Navy to enter into a contract under the pilot programs shall expire September 30, 2007.

Sec. 2882. Assignment of members of the armed forces to housing units

(a) In General. - The Secretary concerned may assign members of the armed forces to housing units acquired or constructed under this subchapter.

(b) Effect of Certain Assignments on Entitlement to Housing Allowances.

- (1) Except as provided in paragraph (2), housing referred to in subsection (a) shall be considered as quarters of the United States or a housing facility under the jurisdiction of a uniformed service for purposes of section 403 of title 37.

- (2) A member of the armed forces who is assigned in accordance with subsection (a) to a housing unit not owned or leased by the United States shall be entitled to a basic allowance for housing under section 403 of title 37.

(c) Lease Payments Through Pay Allotments. - The Secretary concerned may require members of the armed forces who lease housing in housing units acquired or constructed under this subchapter to make lease payments for such housing pursuant to allotments of the pay of such members under section 701 of title 37.

Sec. 2883. Department of Defense Housing Funds

(a) Establishment. - There are hereby established on the books of the Treasury the following accounts:

- (1) The Department of Defense Family Housing Improvement Fund.

- (2) The Department of Defense Military Unaccompanied Housing Improvement Fund.

(b) Commingling of Funds Prohibited.

- (1) The Secretary of Defense shall administer each Fund separately.

- (2) Amounts in the Department of Defense Family Housing Improvement Fund may be used only to carry out activities under this subchapter with respect to military family housing.

- (3) Amounts in the Department of Defense Military Unaccompanied Housing Improvement Fund may be used only to carry out activities under this subchapter with respect to military unaccompanied housing.

(c) Credits to Funds.

- (1) There shall be credited to the Department of Defense Family Housing Improvement Fund the following:

- (A) Amounts authorized for and appropriated to that Fund.

- (B) Subject to subsection (f), any amounts that the Secretary of Defense transfers, in such amounts as provided in appropriation Acts, to that Fund from amounts authorized and appropriated to the Department of Defense for the acquisition or construction of military family housing.

- (C) Proceeds from the conveyance or lease of property or facilities under section 2878 of this title for the purpose of carrying out activities under this subchapter with respect to military family housing.
 - (D) Income derived from any activities under this subchapter with respect to military family housing, including interest on loans made under section 2873 of this title, income and gains realized from investments under section 2875 of this title, and any return of capital invested as part of such investments.
 - (E) Any amounts that the Secretary of the Navy transfers to that Fund pursuant to section 2814(i)(3) of this title, subject to the restrictions on the use of the transferred amounts specified in that section.
- (2) There shall be credited to the Department of Defense Military Unaccompanied Housing Improvement Fund the following:
- (A) Amounts authorized for and appropriated to that Fund.
 - (B) Subject to subsection (f), any amounts that the Secretary of Defense transfers, in such amounts as provided in appropriation Acts, to that Fund from amounts authorized and appropriated to the Department of Defense for the acquisition or construction of military unaccompanied housing.
 - (C) Proceeds from the conveyance or lease of property or facilities under section 2878 of this title for the purpose of carrying out activities under this subchapter with respect to military unaccompanied housing.
 - (D) Income derived from any activities under this subchapter with respect to military unaccompanied housing, including interest on loans made under section 2873 of this title, income and gains realized from investments under section 2875 of this title, and any return of capital invested as part of such investments.
 - (E) Any amounts that the Secretary of the Navy transfers to that Fund pursuant to section 2814(i)(3) of this title, subject to the restrictions on the use of the transferred amounts specified in that section.
- (d) Use of Amounts in Funds.
- (1) In such amounts as provided in appropriation Acts and except as provided in subsection (e), the Secretary of Defense may use amounts in the Department of Defense Family Housing Improvement Fund to carry out activities under this subchapter with respect to military family housing, including activities required in connection with the planning, execution, and administration of contracts entered into under the authority of this subchapter. The Secretary may also use for expenses of activities required in connection with the planning, execution, and administration of such contracts funds that are otherwise available to the Department of Defense for such types of expenses.
 - (2) In such amounts as provided in appropriation Acts and except as provided in subsection (e), the Secretary of Defense may use amounts in the Department of Defense Military Unaccompanied Housing Improvement Fund to carry out activities under this subchapter with respect to military unaccompanied housing, including activities required in connection with the planning, execution, and administration of contracts entered into under the authority of this subchapter. The Secretary may also use for expenses of activities required in connection with the planning, execution, and administration of such contracts funds that are otherwise available to the Department of Defense for such types of expenses.

(3) Amounts made available under this subsection shall remain available until expended. The Secretary of Defense may transfer amounts made available under this subsection to the Secretaries of the military departments to permit such Secretaries to carry out the activities for which such amounts may be used.

(e) Limitation on Obligations. - The Secretary may not incur an obligation under a contract or other agreement entered into under this subchapter in excess of the unobligated balance, at the time the contract is entered into, of the Fund required to be used to satisfy the obligation.

(f) Notification Required for Transfers. - A transfer of appropriated amounts to a Fund under paragraph (1)(B) or (2)(B) of subsection (c) may be made only after the end of the 30-day period beginning on the date the Secretary of Defense submits written notice of, and justification for, the transfer to the appropriate committees of Congress.

(g) Limitation on Amount of Budget Authority. - The total value in budget authority of all contracts and investments undertaken using the authorities provided in this subchapter shall not exceed (1) \$850,000,000 for the acquisition or construction of military family housing; and (2) \$150,000,000 for the acquisition or construction of military unaccompanied housing.

Sec. 2883a. Funds for housing allowances of members of the armed forces assigned to certain military family housing units

(a) Authority to Transfer Funds To Cover Housing Allowances. - During the fiscal year in which a contract is awarded for the acquisition or construction of military family housing units under this subchapter that are not to be owned by the United States, the Secretary of Defense may transfer the amount determined under subsection (b) with respect to such housing from appropriations available for support of military housing for the armed force concerned for that fiscal year to appropriations available for pay and allowances of military personnel of that same armed force for that same fiscal year.

(b) Amount Transferred. - The total amount authorized to be transferred under subsection (a) in connection with a contract under this subchapter may not exceed an amount equal to any additional amounts payable during the fiscal year in which the contract is awarded to members of the armed forces assigned to the acquired or constructed housing units as basic allowance for housing under section 403 of title 37 that would not otherwise have been payable to such members if not for assignment to such housing units.

(c) Transfers Subject to Appropriations. - The transfer of funds under the authority of subsection (a) is limited to such amounts as may be provided in advance in appropriations Acts.

Sec. 2884. Reports

(a) Project Reports.

(1) The Secretary of Defense shall transmit to the appropriate committees of Congress a report describing -

(A) each contract for the acquisition or construction of family housing units or unaccompanied housing units that the Secretary proposes to solicit under this subchapter; and

(B) each conveyance or lease proposed under section 2878 of this title.

(2) The report shall describe the proposed contract, conveyance, or lease and the intended method of participation of the United States in the contract, conveyance, or lease and provide a justification of such method of participation. The report shall be submitted not later than 30 days before the date on which the Secretary issues the contract solicitation or offers the conveyance or lease.

(b) Annual Reports. - The Secretary of Defense shall include each year in the materials that the Secretary submits to Congress in support of the budget submitted by the President pursuant to section 1105 of title 31 the following:

- (1) A report on the expenditures and receipts during the preceding fiscal year covering the Funds established under section 2883 of this title.
- (2) A methodology for evaluating the extent and effectiveness of the use of the authorities under this subchapter during such preceding fiscal year.
- (3) A description of the objectives of the Department of Defense for providing military family housing and military unaccompanied housing for members of the armed forces.

Sec. 2885. Expiration of authority

The authority to enter into a contract under this subchapter shall expire on December 31, 2012.

APPENDIX B

APPLICABLE LAWS, REGULATIONS, POLICIES, AND PLANNING CRITERIA

Appendix B

Applicable Laws, Regulations, Policies, and Planning Criteria

When considering the affected environment, the various physical, biological, economic, and social environmental factors must be considered. In addition to the National Environmental Policy Act (NEPA), there are other environmental laws and Executive Orders (EOs) to be considered when preparing environmental analyses. These laws are summarized below.

Noise

The Air Installation Compatible Use Zone (AICUZ) Program, (Air Force Instruction [AFI] 32-7063), provides guidance to air bases and local communities in planning land uses compatible with airfield operations. The AICUZ program describes existing aircraft noise and flight safety zones on and near U.S. Air Force (USAF) installations.

Land Use

Land use planning in the USAF is guided by *Land Use Planning Bulletin, Base Comprehensive Planning* (HQ USAF/LEEVX, August 1, 1986). This document provides for the use of 12 basic land use types found on an Air Force installation. In addition, land use guidelines established by the U.S. Department of Housing and Urban Development (HUD) and based on findings of the Federal Interagency Committee on Noise (FICON) are used to recommend acceptable levels of noise exposure for land use.

Air Quality

The Clean Air Act (CAA) of 1970, and Amendments of 1977 and 1990 recognize that increases in air pollution result in danger to public health and welfare. To protect and enhance the quality of the Nation's air resources, the CAA authorizes the U.S. Environmental Protection Agency (USEPA) to set six National Ambient Air Quality Standards (NAAQS) which regulate carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and particulate matter pollution emissions. The CAA seeks to reduce or eliminate the creation of pollutants at their source, and designates this responsibility to state and local governments. States are directed to utilize financial and technical assistance as well as leadership from the Federal government to develop implementation plans to achieve NAAQS. Geographic areas are officially designated by USEPA as being in attainment or nonattainment to pollutants in relation to their compliance with NAAQS. Geographic regions established for air quality planning purposes are designated as Air Quality Control Regions (AQCRs). Pollutant concentration levels are measured at designated monitoring stations within the AQCR. An area with insufficient monitoring data is designated as unclassifiable. Section 309 of the CAA authorizes USEPA to review and comment on impact statements prepared by other agencies.

An agency should consider what effect an action could have on NAAQS due to short-term increases in air pollution during construction as well as long-term increases resulting from changes in traffic patterns. For actions in attainment areas, a Federal agency may also be subject to USEPA's Prevention of Significant Deterioration (PSD) regulations. These regulations apply to new major stationary sources and modifications to such sources. Although few agency facilities will actually emit pollutants, increases in pollution can result from a change in traffic patterns or volume. Section 118 of the CAA waives Federal immunity from complying with the CAA and states all Federal agencies will comply with all Federal- and state-approved requirements.

Safety

AFI 91-202, *USAF Mishap Prevention Program*, implements Air Force Policy Directive (AFPD) 91-2, *Safety Programs*. It establishes mishap prevention program requirements (including the Bird/Wildlife

Aircraft Strike Hazard [BASH] Program), assigns responsibilities for program elements, and contains program management information. This instruction applies to all USAF personnel.

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

Water Resources

The Clean Water Act (CWA) of 1977 is an amendment to the Federal Water Pollution Control Act of 1972, is administered by USEPA, and sets the basic structure for regulating discharges of pollutants into U.S. waters. The CWA requires USEPA to establish water quality standards for specified contaminants in surface waters and forbids the discharge of pollutants from a point source into navigable waters without a National Pollutant Discharge Elimination System (NPDES) permit. NPDES permits are issued by USEPA or the appropriate state if it has assumed responsibility. Section 404 of the CWA establishes a Federal program to regulate the discharge of dredge and fill material into waters of the United States. Section 404 permits are issued by the U.S. Army Corps of Engineers (USACE). Waters of the United States include interstate and intrastate lakes, rivers, streams, and wetlands that are used for commerce, recreation, industry, sources of fish, and other purposes. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Each agency should consider the impact on water quality from actions such as the discharge of dredge or fill material into U.S. waters from construction, or the discharge of pollutants as a result of facility occupation.

Section 303(d) of the CWA requires states and USEPA to identify waters not meeting state water-quality standards and to develop Total Maximum Daily Loads (TMDLs). A TMDL is the maximum amount of a pollutant that a waterbody can receive and still be in compliance with state water-quality standards. After determining TMDLs for impaired waters, states are required to identify all point and nonpoint sources of pollution in a watershed that are contributing to the impairment and to develop an implementation plan that will allocate reductions to each source in order to meet the state standards. The TMDL program is currently the Nation's most comprehensive attempt to restore and improve water quality. The TMDL program does not explicitly require the protection of riparian areas. However, implementation of the TMDL typically calls for restoration of riparian areas as one of the required management measures for achieving reductions in nonpoint source pollutant loadings.

The Coastal Zone Management Act (CZMA) of 1972 declares a national policy to preserve, protect, and develop; and, where possible, restore or enhance the resources of the Nation's coastal zone. The coastal zone refers to the coastal waters and the adjacent shorelines including islands, transitional and intertidal areas, salt marshes, wetlands, and beaches, and includes the Great Lakes. The CZMA encourages states to exercise their full authority over the coastal zone through the development of land and water use programs in cooperation with Federal and local governments. States may apply for grants to help develop and implement management programs to achieve wise use of the land and water resources of the coastal zone. Development projects affecting land or water use or natural resources of a coastal zone, must ensure the project is, to the maximum extent practicable, consistent with the state's coastal zone management program.

The Safe Drinking Water Act (SDWA) of 1974 establishes a Federal program to monitor and increase the safety of all commercially and publicly supplied drinking water. Congress amended the SDWA in 1986, mandating dramatic changes in nationwide safeguards for drinking water and establishing new Federal enforcement responsibility on the part of USEPA. The 1986 amendments to the SDWA require USEPA to establish Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs), and Best Available Technology (BAT) treatment techniques for organic, inorganic, radioactive, and microbial

contaminants; and turbidity. MCLGs are maximum concentrations below which no negative human health effects are known to exist. The 1996 amendments set current Federal MCLs, MCLGs, and BATs for organic, inorganic, microbiological, and radiological contaminants in public drinking water supplies.

The Wild and Scenic Rivers Act of 1968 provides for a wild and scenic river system by recognizing the remarkable values of specific rivers of the Nation. These selected rivers and their immediate environment are preserved in a free-flowing condition, without dams or other construction. The policy not only protects the water quality of the selected rivers but also provides for the enjoyment of present and future generations. Any river in a free-flowing condition is eligible for inclusion, and can be authorized as such by an Act of Congress, an act of state legislature, or by the Secretary of the Interior upon the recommendation of the governor of the state(s) through which the river flows.

EO 11988, *Floodplain Management* (May 24, 1977), directs agencies to consider alternatives to avoid adverse effects and incompatible development in floodplains. An agency may locate a facility in a floodplain if the head of the agency finds there is no practicable alternative. If it is found there is no practicable alternative, the agency must minimize potential harm to the floodplain, and circulate a notice explaining why the action is to be located in the floodplain prior to taking action. Finally, new construction in a floodplain must apply accepted floodproofing and flood protection to include elevating structures above the base flood level rather than filling in land.

Biological Resources

The Endangered Species Act (ESA) of 1973 establishes a Federal program to conserve, protect, and restore threatened and endangered plants and animals and their habitats. The ESA specifically charges Federal agencies with the responsibility of using their authority to conserve threatened and endangered species. All Federal agencies must ensure any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction of critical habitat for these species, unless the agency has been granted an exemption. The Secretary of the Interior, using the best available scientific data, determines which species are officially endangered or threatened, and the U.S. Fish and Wildlife Service (USFWS) maintains the list. A list of Federal endangered species can be obtained from the Endangered Species Division, USFWS (703-358-2171). States might also have their own lists of threatened and endangered species which can be obtained by calling the appropriate State Fish and Wildlife office. Some species, such as the bald eagle, also have laws specifically for their protection (e.g., Bald Eagle Protection Act).

The Migratory Bird Treaty Act (MBTA) of 1918, as amended, implements treaties and conventions between the United States, Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless otherwise permitted by regulations, the MBTA makes it unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver, or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not. The MBTA also makes it unlawful to ship, transport or carry from one state, territory or district to another, or through a foreign country, any bird, part, nest, or egg that was captured, killed, taken, shipped, transported, or carried contrary to the laws from where it was obtained; and import from Canada any bird, part, nest, or egg obtained contrary to the laws of the province from which it was obtained. The U.S. Department of the Interior has authority to arrest, with or without a warrant, a person violating the MBTA.

EO 11514, *Protection and Enhancement of Environmental Quality* (March 5, 1970), states that the President, with assistance from the Council on Environmental Quality (CEQ), will lead a national effort to provide leadership in protecting and enhancing the environment for the purpose of sustaining and enriching human life. Federal agencies are directed to meet national environmental goals through their policies, programs, and plans. Agencies should also continually monitor and evaluate their activities to protect and enhance the quality of the environment. Consistent with NEPA, agencies are directed to share

information about existing or potential environmental problems with all interested parties, including the public, in order to obtain their views.

EO 11990, *Protection of Wetlands* (May 24, 1977), directs agencies to consider alternatives to avoid adverse effects and incompatible development in wetlands. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland, and the proposed construction incorporates all possible measures to limit harm to the wetland. Agencies should use economic and environmental data, agency mission statements, and any other pertinent information when deciding whether or not to build in wetlands. EO 11990 directs each agency to provide for early public review of plans for construction in wetlands.

EO 13186, *Conservation of Migratory Birds* (January 10, 2001), creates a more comprehensive strategy for the conservation of migratory birds by the Federal government. EO 13186 provides a specific framework for the Federal government's compliance with its treaty obligations to Canada, Mexico, Russia, and Japan. EO 13186 provides broad guidelines on conservation responsibilities and requires the development of more detailed guidance in a Memorandum of Understanding (MOU). EO 13186 will be coordinated and implemented by the USFWS. The MOU will outline how Federal agencies will promote conservation of migratory birds. EO 13186 requires the support of various conservation planning efforts already in progress; incorporation of bird conservation considerations into agency planning, including NEPA analyses; and reporting annually on the level of take of migratory birds.

Cultural Resources

The American Indian Religious Freedom Act of 1978 and Amendments of 1994 recognize that freedom of religion for all people is an inherent right, and traditional American Indian religions are an indispensable and irreplaceable part of Indian life. It also recognized the lack of Federal policy on this issue and made it the policy of the United States to protect and preserve the inherent right of religious freedom for Native Americans. The 1994 Amendments provide clear legal protection for the use of peyote cactus as a religious sacrament. Federal agencies are responsible for evaluating their actions and policies to determine if changes should be made to protect and preserve the religious cultural rights and practices of Native Americans. These evaluations must be made in consultation with native traditional religious leaders.

The Archeological Resource Protection Act (ARPA) of 1979 protects archeological resources on public and American Indian lands. It provides felony-level penalties for the unauthorized excavation, removal, damage, alteration, or defacement of any archeological resource, defined as material remains of past human life or activities which are at least 100 years old. Before archeological resources are excavated or removed from public lands, the Federal land manager must issue a permit detailing the time, scope, location, and specific purpose of the proposed work. ARPA also fosters the exchange of information about archeological resources between governmental agencies, the professional archeological community, and private individuals. ARPA is implemented by regulations found in 43 CFR Part 7.

The National Historic Preservation Act (NHPA) of 1966 sets forth national policy to identify and preserve properties of state, local, and national significance. The NHPA establishes the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Offices (SHPOs), and the National Register of Historic Places (NRHP). ACHP advises the President, Congress, and Federal agencies on historic preservation issues. Section 106 of the NHPA directs Federal agencies to take into account effects of their undertakings (actions and authorizations) on properties included in or eligible for the NRHP. Section 110 sets inventory, nomination, protection, and preservation responsibilities for federally owned cultural properties. Section 106 of the act is implemented by regulations of the ACHP, 36 CFR Part 800. Agencies should coordinate studies and documents prepared under Section 106 with NEPA where appropriate. However, NEPA and NHPA are separate statutes and compliance with one does not constitute compliance with the other. For example, actions which qualify for a categorical exclusion under NEPA might still require Section 106 review under NHPA. It is the responsibility of the agency

official to identify properties in the area of potential effects, and whether they are included or eligible for inclusion in the NRHP. Section 110 of the NHPA requires Federal agencies to identify, evaluate, and nominate historic property under agency control to the NRHP.

The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 establishes rights of American Indian tribes to claim ownership of certain “cultural items,” defined as Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony, held or controlled by Federal agencies. Cultural items discovered on Federal or tribal lands are, in order of primacy, the property of lineal descendants, if these can be determined, and then the tribe owning the land where the items were discovered or the tribe with the closest cultural affiliation with the items. Discoveries of cultural items on Federal or tribal land must be reported to the appropriate American Indian tribe and the Federal agency with jurisdiction over the land. If the discovery is made as a result of a land use, activity in the area must stop and the items must be protected pending the outcome of consultation with the affiliated tribe.

EO 11593, *Protection and Enhancement of the Cultural Environment* (May 13, 1971), directs the Federal government to provide leadership in the preservation, restoration, and maintenance of the historic and cultural environment. Federal agencies are required to locate and evaluate all Federal sites under their jurisdiction or control which may qualify for listing on the NRHP. Agencies must allow the ACHP to comment on the alteration, demolition, sale, or transfer of property which is likely to meet the criteria for listing as determined by the Secretary of the Interior in consultation with the SHPO. Agencies must also initiate procedures to maintain federally owned sites listed on the NRHP.

EO 13007, *Indian Sacred Sites* (May 24, 1996), provides that agencies managing Federal lands, to the extent practicable, permitted by law, and not inconsistent with agency functions, shall accommodate American Indian religious practitioners’ access to and ceremonial use of American Indian sacred sites, shall avoid adversely affecting the physical integrity of such sites, and shall maintain the confidentiality of such sites. Federal agencies are responsible for informing tribes of proposed actions that could restrict future access to or ceremonial use of, or adversely affect the physical integrity of, sacred sites.

EO 13287, *Preserve America* (March 3, 2003), orders Federal agencies to take a leadership role in protection, enhancement, and contemporary use of historic properties owned by the Federal government, and promote intergovernmental cooperation and partnerships for preservation and use of historic properties. EO 13287 established new accountability for agencies with respect to inventories and stewardship.

Socioeconomics and Environmental Justice

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994), directs Federal agencies to make achieving environmental justice part of their mission. Agencies must identify and address the adverse human health or environmental effects that its activities have on minority and low-income populations, and develop agency-wide environmental justice strategies. The strategy must list “programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations, ensure greater public participation, improve research and data collection relating to the health of and environment of minority populations and low-income populations, and identify differential patterns of consumption of natural resources among minority populations and low-income populations.” A copy of the strategy and progress reports must be provided to the Federal Working Group on Environmental Justice. Responsibility for compliance with EO 12898 is with each Federal agency.

Hazardous Materials and Waste

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 authorizes USEPA to respond to spills and other releases of hazardous substances to the environment, and

authorizes the National Oil and Hazardous Substances Pollution Contingency Plan. CERCLA also provides a Federal “Superfund” to respond to emergencies immediately. Although the “Superfund” provides funds for cleanup of sites where potentially responsible parties cannot be identified, USEPA is authorized to recover funds through damages collected from responsible parties. This funding process places the economic burden for cleanup on polluters.

The Pollution Prevention Act (PPA) of 1990 encourages manufacturers to avoid the generation of pollution by modifying equipment and processes, redesigning products, substituting raw materials, and making improvements in management techniques, training, and inventory control. Consistent with pollution prevention principles, EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* (January 24, 2007 [revoking EO 13148]) sets a goal for all Federal agencies that promotes environmental practices, including acquisition of biobased, environmentally preferable, energy-efficient, water-efficient, and recycled-content products, and use of paper of at least 30 percent post-consumer fiber content. In addition, EO 13423 sets a goal that requires Federal agencies to ensure that they reduce the quantity of toxic and hazardous chemicals and materials acquired, used, or disposed of, increase diversion of solid waste as appropriate, and maintain cost effective waste prevention and recycling programs in their facilities. Additionally, in *Federal Register* Volume 58 Number 18 (January 29, 1993), CEQ provides guidance to Federal agencies on how to “incorporate pollution prevention principles, techniques, and mechanisms into their planning and decision making processes and to evaluate and report those efforts, as appropriate, in documents pursuant to NEPA.”

The Resource Conservation and Recovery Act (RCRA) of 1976 is an amendment to the Solid Waste Disposal Act. RCRA authorizes USEPA to provide for “cradle-to-grave” management of hazardous waste and sets a framework for the management of nonhazardous municipal solid waste. Under RCRA, hazardous waste is controlled from generation to disposal through tracking and permitting systems, and restrictions and controls on the placement of waste on or into the land. Under RCRA, a waste is defined as hazardous if it is ignitable, corrosive, reactive, toxic, or listed by USEPA as being hazardous. With the Hazardous and Solid Waste Amendments (HSWA) of 1984, Congress targeted stricter standards for waste disposal and encouraged pollution prevention by prohibiting the land disposal of particular wastes. The HSWA amendments strengthen control of both hazardous and nonhazardous waste and emphasize the prevention of pollution of groundwater.

The Superfund Amendments and Reauthorization Act (SARA) of 1986 mandates strong clean-up standards and authorizes the USEPA to use a variety of incentives to encourage settlements. Title III of SARA authorizes the Emergency Planning and Community Right to Know Act (EPCRA), which requires facility operators with “hazardous substances” or “extremely hazardous substances” to prepare comprehensive emergency plans and to report accidental releases. If a Federal agency acquires a contaminated site, it can be held liable for clean-up as the property owner/operator. A Federal agency can also incur liability if it leases a property, as the courts have found lessees liable as “owners.” However, if the agency exercises due diligence by conducting a Phase I Environmental Site Assessment, it can claim the “innocent purchaser” defense under CERCLA. According to Title 42 U.S. Code (U.S.C.) 9601(35), the current owner/operator must show it undertook “all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice” before buying the property to use this defense.

The Toxic Substance Control Act (TSCA) of 1976 consists of four titles. Title I established requirements and authorities to identify and control toxic chemical hazards to human health and the environment. TSCA authorized USEPA to gather information on chemical risks, require companies to test chemicals for toxic effects, and regulate chemicals with unreasonable risk. TSCA also singled out polychlorinated bi-phenyls (PCBs) for regulation, and, as a result, PCBs are being phased out. PCBs are persistent when released into the environment and accumulate in the tissues of living organisms. They have been shown to cause adverse health effects on laboratory animals and can cause adverse health effects in humans. TSCA and its regulations govern the manufacture, processing, distribution, use, marking, storage,

disposal, clean-up, and release reporting requirements for numerous chemicals like PCBs. TSCA Title II provides statutory framework for “Asbestos Hazard Emergency Response,” which applies only to schools. TSCA Title III, “Indoor Radon Abatement,” states indoor air in buildings of the United States should be as free of radon as the outside ambient air. Federal agencies are required to conduct studies on the extent of radon contamination in buildings they own. TSCA Title IV, “Lead Exposure Reduction,” directs Federal agencies to “conduct a comprehensive program to promote safe, effective, and affordable monitoring, detection, and abatement of lead-based paint and other lead exposure hazards.” Further, any Federal agency having jurisdiction over a property or facility must comply with all Federal, state, interstate, and local requirements concerning lead-based paint.

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APPENDIX C
INTERAGENCY COORDINATION AND PUBLIC INVOLVEMENT

**Environmental Assessment of Privatization of Military Family Housing,
Andrews Air Force Base, Maryland**

Interagency and Intergovernmental Coordination for Environmental Planning List

Mr. Bill Arguto
Environmental Review Coordinator
USEPA Region 3
1650 Arch Street
Philadelphia, PA 19106

Mr. John Wolflin
Field Supervisor
USFWS, Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401

Linda C. Janey, J.D.
Director, Maryland State Clearinghouse
For Intergovernmental Assistance
301 West Preston Street, Room 1104
Baltimore, MD 21201-2305

Mr. J. Rodney Little
State Historic Preservation Office
Maryland Historical Trust
100 Community Place, Third Floor
Crownsville, MD 21032-2023

Dr. Fern Piret
Director of Planning
Prince George's County Department of Planning
14741 Governor Oden Bowie Drive, Room 4150
Upper Marlboro, MD 20772

Mr. George Harmon
Maryland Department of the Environment
1800 Washington Blvd.
Baltimore, MD 21230

Mr. Bruce Crawford
Executive Director
M-NCPPC
6611 Kenilworth Avenue, Suite 402
Riverdale, Maryland 20737

Kathy Anderson
MD Section Southern – CENAB-OP- RMS
Baltimore District Regulatory Branch
U.S. Army Corps of Engineers
P.O. Box 1715
Baltimore, Maryland 21203-1715

Mr. Ray Dintaman
Environmental Review Unit
Maryland Department of Resources
Tawes State Office Building
580 Taylor Avenue
Annapolis, MD 21401

Prince George's County Board of Education
Prince George's County Public Schools
14201 School Lane, Room 121
Upper Marlboro, MD 20772

Dr. Deborah T. Stone
Principal
Francis T. Evans Elementary School
6720 Old Alexandria Ferry Road
Clinton, MD 20735

Alice Swift-Howard
Principal
Surrattsville High School
6101 Garden Drive
Clinton, MD 20735

Rudolf Saunders
Principal
Stephen Decatur Middle School
8200 Pinewood Drive
Clinton, MD 20735

Mr. Carrington Smith
Principal
Melwood Elementary School
Upper Marlboro, MD 20772

Mr. Mark King
Principal
James Madison Middle School
7300 Woodyard Road
Upper Marlboro, MD 20772

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR MOBILITY COMMAND

22 JUN 2008

MEMORANDUM FOR SEE DISTRIBUTION

FROM: HQ AMC/A7P
507 Symington Drive
Scott AFB IL 62225-5022

SUBJECT: Description of Proposed Action and Alternatives (DOPAA) for Military Privatization Initiative at Andrews Air Force Base (AFB), Maryland

1. The Air Mobility Command is preparing an Environmental Assessment (EA) of the Privatization of Military Family Housing at Andrews AFB. The Proposed Action is to lease the military family housing units at Andrews AFB to a private developer so that through construction, demolition, and renovation, the end-state total would be 887 housing units. The DOPAA is included with this correspondence.
2. The environmental impact analysis process for the Proposed Action and the No Action Alternative is being conducted by the Air Mobility Command in accordance with the Council on Environmental Quality guidelines pursuant to the requirements of the National Environmental Policy Act of 1969. In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation by reviewing the attached DOPAA and solicit your comments concerning the proposal and any potential environmental consequences. Also enclosed is the distribution list of those Federal, state, and local agencies that have been contacted. If there are any additional agencies that you feel should review and comment on the proposal, please include them in your distribution of this letter and the attached materials.
3. Please provide any comments or information directly to HQ AMC/A7P, 507 Symington Drive, Scott AFB, IL 62225-5022 within 30 calendar days upon receipt of this notification.
4. If members of your staff have any questions, our point of contact is Mr. Mark Fetzer, HQ AMC/A7PC, 618-229-0843, or e-mail to mark.fetzer.ctr@scott.af.mil.

Anthony F. Hutchison for
MICHAEL W. HUTCHISON, Colonel, USAF
Chief, Plans and Programs Division
Directorate of Installations & Mission Support

Attachment:
DOPAA

DISTRIBUTION: (listed on next page)

AMC— GLOBAL REACH FOR AMERICA

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August 7, 2006

Mr. Mark Fetzer
HQ AMC/A7P
507 Symington Drive
Scott AFB, Illinois 62225-5022

RE: Description of Proposed Action and Alternatives (DOPAA) for Military Privatization Initiative at Andrews Air Force Base (AAFB), Maryland

Dear Mr. Fetzer:

Thank you for the opportunity to review the *Description of Proposed Action and Alternatives (DOPAA) for Military Privatization Initiative at Andrews Air Force Base (AAFB), Maryland*. AAFB is located in Morningside, Maryland and encompasses 6,828 acres. The Town of Morningside and the unincorporated community of Camp Springs are contiguous to the installation.

As part of Planning Area 77, Melwood, AAFB is located within the 1994 *Melwood-Westphalia Approved Master Plan and Sectional Map Amendment (SMA)*. The 1994 *Melwood-Westphalia Approved Master Plan and SMA* recommended a public land use and zoned the base property I-1 (Light Industrial). The base is located within the Developing Tier and is identified as a government installation land use as defined by the 2002 *Prince George's County Approved General Plan*. Additionally, AAFB is contiguous to other master plan areas including the 2006 *Approved Henson Creek-South Potomac Master Plan and SMA*, 1993 *Approved Subregion V Master Plan and SMA*, and the 2006 *Preliminary Westphalia Sector Plan and SMA*.

The DOPAA Proposed Action is to convey 1,480 multifamily housing units (MFH), grant leases for approximately 406.5 acres of land, and transfer responsibility for providing housing and other supporting facilities to a private developer (PO) at the AAFB installation. The majority of existing MFH units at AAFB are located on the western portion of the base extending over 18 parcels of land. Three additional parcels are also subject to this proposal. The Proposed Action plans to convey the 1,480 MFH units, of which the PO would retain 490 newly built or recently renovated units; renovate 139 units; construct 248 units; and demolish 851 units, resulting in a reduction of MFH units from 1,480 to 887 total units. Under this agreement the PO would assume responsibility to operate a rental housing development for the benefit of United States Air Force (USAF) and other personnel for 50 years with an option for the USAF to extend the lease for an additional 25 years. The PO would also be responsible to plan, design, develop, renovate, demolish, construct, own, operate and manage all necessary assets of the MFH units and designated support facilities. In exchange for these services, the PO would become entitled to the rental income based on each applicant's Basic Allowance for Housing (BAH). If the vacancy rates exceed 5% for three consecutive months, the PO could rent to other eligible tenants at unrestricted rates. Such eligible tenants could include members of the general public.

Mr. Mark Fetzer
Page Two

The proposal is not inconsistent with the goals, objectives, policies and strategies of the 1994 *Approved Melwood-Westphalia Master Plan and SMA* as well as the 2002 *Prince George's County Approved General Plan*. We would like to request the continued cooperation and involvement with regard to the planning of the proposed improvements as well as the environmental aspects of the proposal. We look forward to working with you in the future and to the completion of the environmental assessment. If you have any questions, please contact me or Keith Hall at 301-780-2232 or via email at Keith.Hall@ppd.mncppc.org.

Sincerely,



Fern Piret
Planning Director

cc: Al Dobbins, Chief, Community Planning Division
Keith Hall, Community Planning Division

The following Notice of Availability was published in the *Prince George's Gazette* on March 22, 2007, announcing a 30-day public review period. A copy of the Draft EA and Draft FONSI were made available for the public to review in the Prince George's County Memorial Library System Upper Marlboro Branch Library for the 30-day public review period.

PUBLIC NOTICE

**Notice of Availability
Draft Finding of No Significant Impact and
Draft Environmental Assessment**

Headquarters Air Mobility Command is proposing to issue a Finding of No Significant Impact (FONSI) based on an Environmental Assessment (EA) of the Privatization of Military Family Housing at Andrews Air Force Base (AFB), Maryland.

The analysis considered in detail potential effects of the Proposed Action and the No Action Alternative on the following resources: noise, land use, air quality, safety, geological resources, water resources, biological resources, cultural resources, socioeconomics and environmental justice, hazardous materials and waste management, and infrastructure. The results, as found in the EA, show that the Proposed Action would not have a significant adverse impact on the environment, indicating that a FONSI would be appropriate. An Environmental Impact Statement should not be necessary to implement the Proposed Action.

Copies of the Draft FONSI and EA showing the analysis are available for review at the Prince George's County Memorial Library System Upper Marlboro Branch Library, 14730 Main St., Upper Marlboro, MD 20772. Public comments on the Draft FONSI and EA will be accepted through April 23, 2007. Written comments should be sent to Mr. Joseph Brown, Chief, Environmental Planning Branch, 316 CES/CEVP, 1419 Menoher Drive, Andrews AFB, MD 20724.

The following privacy advisory was published as part of the Cover Sheet on the Draft EA:

Your comments on this document are requested. Letters or other written comments provided may be published in the EA. Comments will normally be addressed in the EA and made available to the public. Any personal information provided will be used only to identify your desire to make a statement during the public comment period or to fulfill requests for copies of the EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the EA. However, only the names of the individuals making comments and specific comments will be disclosed; personal home addresses and phone numbers will not be published in the EA.

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 316TH WING (AFDW)



MEMORANDUM FOR SEE DISTRIBUTION

29 MAR 07

FROM: 316 CES/CEV
3466 North Carolina Avenue
Andrews AFB MD 20762-4803

SUBJECT: Draft Environmental Assessment (DEA) for the Privatization of Military Family Housing

1. The 316th Civil Engineering Squadron Environmental Flight (CES/CEV) prepared an Environmental Assessment (EA) of the Privatization Military Family Housing at Andrews AFB. Consistent with the USAF Housing Privatization Program, the Air Force proposes to convey its MFH units, grant leases of land, and transfer responsibility for providing housing and ancillary supporting facilities to a private developer at Andrews Air Force Base (AFB). This EA was prepared to evaluate the Proposed Action and reasonable alternatives, including the No Action Alternative.
2. The environmental impact analysis process for the Proposed Action and the No Action Alternative is being conducted by the 316 CES/CEV in accordance with the Council on Environmental Quality guidelines pursuant to the requirements of the National Environmental Policy Act of 1969. In accordance with Air Force Instruction 32-7060, "Interagency and Intergovernmental Coordination for Environmental Planning" and the Executive Order 12372, Intergovernmental Review of Federal Programs, we request your participation by reviewing the attached EA and solicit your comments concerning the proposal and any potential environmental consequences. Also enclosed is the distribution list of those federal, state, and local agencies that have been contacted.
3. Please provide any comments or information directly to the 316 CES/CEV, 3466 North Carolina Avenue, Andrews AFB, MD 20762-4803 within 30 calendar days upon receipt of this notification.
4. If members of your staff have any questions, our point of contact is Mr. Keith Harris at (301)981-1653 or e-mail to keith.harris@andrews.af.mil


JOHN A. FRANZ, YF-02
Environmental Flight Chief

Attachment:
Draft EA

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THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

14741 Governor Oden Bowie Drive
Upper Marlboro, Maryland 20772
TTY: (301) 952-3796

Office of the Director
Prince George's County Planning Department

301-952-3595
www.mncppc.org
D7-040301

April 13, 2007

Mr. John A. Franz, YF-02
Environmental Flight Chief
Department of the Air Force
Headquarters 316th Wing (AFDW)
316 CES/CEV
3466 North Carolina Avenue
Andrews AFB, Maryland 20762-4803

**RE: Draft Environmental Assessment (DEA) for
the Privatization of Military Housing at
Andrews Air Force Base (AFB), Maryland**

Dear Mr. Franz:

Thank you for the opportunity to review the *Draft Environmental Assessment (DEA) for the Privatization of Military Family Housing at Andrews Air Force Base (AFB), Maryland*. The Prince George's County Planning Department has previously provided comments on the Description of Proposed Action and Alternatives (DOPAA) for this action as reflected in Appendix C in the document. The Planning Department has no further comments.

We look forward to continued coordination on planned actions at Andrews Air Force Base. If you have any questions, please contact me or Betty Carlson-Jameson at 301-952-3179.

Sincerely,

Fern Piret
Planning Director

cc: Ivy A. Lewis, Chief, Community Planning South Division
Betty Carlson-Jameson, Community Planning South Division

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APPENDIX D

**COORDINATION BETWEEN THE AIR FORCE AND THE
MARYLAND HISTORICAL TRUST REGARDING BELLE CHANCE**

MDP
Maryland Department of Planning

Martin O'Malley
Governor
Anthony G. Brown
Lt. Governor

Richard E. Hall
Secretary

Deputy Secretary

January 18, 2007

Lieutenant Colonel Brian P. Duffy
Base Civil Engineer
3465 North Carolina Avenue
Andrews AFB, MD 20762

Re: Military Housing Privatization Initiative
Belle Chance Property
Andrews Air Force Base, Prince George's County, Maryland

Dear Lieutenant Colonel Duffy:

Thank you for contacting the Maryland Historical Trust (MHT) regarding the Military Housing Privatization Initiative (MHPI) at Andrews Air Force Base. We have reviewed the materials provided with your December 14, 2006 letter and are writing in accordance with Section 106 of the National Historic Preservation Act to provide our comments regarding effects on historic properties.

The proposed MHPI includes the long-term lease of the historic Belle Chance property to a private entity. Belle Chance consists of a 1912 house, two 1912 outbuildings, and a cemetery and archeological site that date from the nineteenth century. The property is included in the Maryland Inventory of Historic Properties as number PG: 77-14 and is eligible for listing in the National Register of Historic Places.

MHT agrees with Andrews AFB that the proposed covenant enclosed with your letter would provide for the long-term preservation and maintenance of Belle Chance in a manner consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. Execution of a lease with the covenant in place would ensure the MHPI would have "no adverse effects" on historic properties.

Thank you for providing us this opportunity to comment. We look forward to working with Andrews AFB to complete Section 106 requirements for this and future undertakings. If you have questions or if we may be of assistance, please contact Jonathan Sager (for historic built environment) at jsager@mdp.state.md.us \ 410-514-7636 or me (for archeology) at bcole@mdp.state.md.us \ 410-514-7631.

Sincerely,



Elizabeth J. Cole
Administrator, Review and Compliance
Maryland Historical Trust

EJCUES\200604041
cc: John Franz (Andrews AFB)
Joseph Brown (Andrews AFB)

100 Community Place • Crownsville, Maryland 21032-2023
Telephone: 410.514.7600 • Fax: 410.987.4071 • Toll Free: 1.800.756.0119 • TTY Users: Maryland Relay
Internet: www.marylandhistoricaltrust.net

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From: B Cole [BCole@mdp.state.md.us]
Sent: Friday, January 19, 2007 10:44 AM
To: Franz, John A Civ 316 CES/CEV; J Sager
Cc: Brown, Joseph L Jr Civ 316 CES/CEVP; Harris, Keith M Civ 316
CES/CEVP; Fetzer, Mark S CTR AMC/A7PC
Subject: RE: Belle Chance \ MHPI

John,

Based on our telephone conversation and the information you provided, I agree that the USAF and MHT have never specifically addressed the National Register eligibility of the cemetery at Belle Chance. There is no real reason to do so at this point, as the cemetery will be treated as a special resource regardless of its eligibility.

I hope this clarifies the situation for your records.

Beth

Beth Cole
Administrator, Project Review & Compliance Maryland Historical Trust / MDP 100 Community Place
Crownsville, Maryland 21032
410-514-7631
bcole@mdp.state.md.us
www.marylandhistoricaltrust.net

-----Original Message-----

From: Franz, John A Civ 316 CES/CEV [mailto:JOHN.FRANZ@Andrews.af.mil]
Sent: Friday, January 19, 2007 10:21 AM
To: J Sager; B Cole
Cc: Brown, Joseph L Jr Civ 316 CES/CEVP; Harris, Keith M Civ 316 CES/CEVP; Fetzer, Mark S
CTR AMC/A7PC
Subject: RE: Belle Chance \ MHPI

Jonathan

We have looked over the documents you refer to. The criteria for Belle Chance bldgs eligibility is clear and the bldgs are part of the MHPI.

The eligible portion of site 18PR447 ***[[Preparer's Note: The description of the location of site 18PR 447 has been omitted from this appendix]]*** - pg 64 of the 1999 report shows a map of this. Also page 74 provides words that describe the boundaries of 18PR447. A portion of the site is included in the MHPI (we are having a map done that overlays the MHPI boundaries and the site as well as the bldgs and will provide to you when done). Obviously that portion of the site included in the MHPI will be properly addressed in the covenants.

The cemetery is not within the boundary of 18PR447. No doubt it is a special resource and must be treated accordingly, but not from a NRHP eligibility standpoint. This has no real bearing on MHPI as the cemetery is not within the boundary of the privatization, but it is important for future cultural resource reference.

I spoke briefly with Beth Cole on this today and I think we are in agreement. I'd appreciate an e-mail back indicating your concurrence (hopefully!).

Thanks again

//SIGNED//

JOHN A. FRANZ, GS-14, DAF
Chief, Environmental Flight
john.franz@andrews.af.mil
(301) 981-7120, dsn 858-7120
(301) 981-7125 fax

-----Original Message-----

From: J Sager [mailto:JSager@mdp.state.md.us]
Sent: Friday, January 19, 2007 8:52 AM
To: Franz, John A Civ 316 CES/CEV
Cc: Brown, Joseph L Jr Civ 316 CES/CEVP; B Cole
Subject: RE: Belle Chance \ MHPI

You ask an interesting question.

One of the qualities that make Belle Chance an important and interesting property is that its parts demonstrate a very broad range of significance and time periods. The three historic buildings (PG:77-14) are eligible under National Register Criterion C as rare examples of an early twentieth-century construction system. The archeological site (18PR447) consists of "intact cultural deposits and features," including above-ground landscape elements like ditches and the cemetery. The archeological aspect of the property physically overlaps PG:77-14 and is significant for its potential to yield important information about both historic and prehistoric occupations of the property.

The eligibility of the buildings was formally addressed in a 2000 DOE form and earlier Section 110 survey work. The eligibility of the archeological site was formally addressed in the report "Phase II Archaeological Survey of Andrews Air Force Base, Prince George's County, and Davidsonville Transmitter Station, Anne Arundel County, Maryland" (Bienenfeld and Leininger 1999).

Thank you for your ongoing work to ensure the long-term preservation of Belle Chance and for your cooperation and coordination with us. Please let me know if you have any other questions or we can be of help.

- Jonathan

Jonathan Sager
Preservation Officer
Maryland Historical Trust
100 Community Place
Crownsville, MD 21032

410-514-7636 (phone)
410-987-4071 (fax)

-----Original Message-----

From: Franz, John A Civ 316 CES/CEV [mailto:JOHN.FRANZ@Andrews.af.mil]

Sent: Thursday, January 18, 2007 5:59 PM

To: J Sager

Cc: Brown, Joseph L Jr Civ 316 CES/CEVP; B Cole

Subject: RE: Belle Chance \ MHPI

Jonathan

Thanks for the reply. One question - in the letter you note that "Belle Chance" consists of the house, 2 outbldgs, cemetery and archeological site.

We are unaware that the cemetery is part of the formal eligibility of Belle Chance. I do not see it noted as a contributing element in the documentation (or I missed it).

Can you clarify that point?

Thanks

J Franz

-----Original Message-----

From: J Sager [mailto:JSager@mdp.state.md.us]

Sent: Thursday, January 18, 2007 3:20 PM

To: Franz, John A Civ 316 CES/CEV

Cc: Brown, Joseph L Jr Civ 316 CES/CEVP

Subject: Belle Chance \ MHPI

The proposed covenant looks fine to us. A copy of our formal concurrence is attached. The original should go in the mail today or tomorrow.

Sorry for any delay.

- Jonathan

Jonathan Sager
Preservation Officer
Maryland Historical Trust
100 Community Place
Crownsville, MD 21032

410-514-7636 (phone)

410-987-4071 (fax)

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 316TH WING (AFDW)



Lieutenant Colonel Brian P. Duffy
Commander, 316th Civil Engineer Squadron
3465 North Carolina Avenue
Andrews AFB MD 20762

FEB 21 2007

Mr. J. Rodney Little
Director/State Historic Preservation Officer
Maryland Historical Trust
100 Community Place
Crownsville MD 21032

Reference: (a) Air Force Letter to Maryland Historical Trust (Trust) regarding Military Housing Privatization Initiative (MHPI) Belle Chance property, dated December 18, 2006
(b) Trust Response Letter to MHPI Belle Chance property, dated January 18, 2007

Dear Mr. Little

This transmittal letter is follow-on correspondence to the above-referenced letters on the privatization of the Belle Chance property. The Air Force has proposed a Military Housing Privatization Initiative (MHPI) at Andrews AFB in Prince Georges County, Maryland. As part of the MHPI, the Air Force proposes to undertake conveyance of the entire, on-base housing inventory to a private-sector developer. The developer will also receive a 50-year lease of the federally-owned property on which the housing units are located. The developer will be responsible for planning, designing, constructing, renovating, operating, and maintaining the resulting rental housing development for the benefit of personnel authorized to live on Andrews AFB. This undertaking includes the transfer the National Register of Historic Places (NRHP) eligible Belle Chance buildings and an associated 1.29 acres of land.

In ongoing efforts to implement the MHPI and ensure compliance with the National Historic Preservation Act (NHPA) for the Belle Chance undertaking, the attached draft documents are provided for your review and approval. Our intent is to use a Preservation Covenant, included in the attached letter agreement as Exhibit B and proposed for incorporation into the MHPI Quit Claim Deed, to ensure the long-term preservation of the historic significance of Belle Chance pursuant to Section 106 of the NHPA.

As you know, 36 CFR 800.5(a)(2)(vii) deems any transfer, lease or sale of property out of federal ownership or control as an adverse effect absent adequate and legally enforceable restrictions or conditions to preserve the property's historic significance. Based on the use of the Preservation Covenant in the proposed MHPI conveyance, Air Force finds no adverse effect in the transfer of Belle Chance.

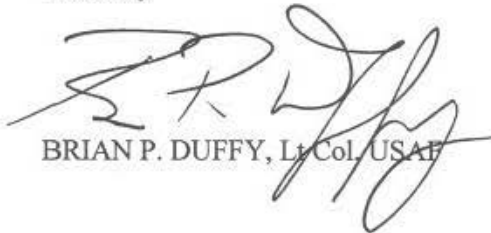
We will continue to follow the process prescribed by National Environmental Policy Act (NEPA) for our MHPI as a proposed action, and expect the final draft environmental assessment for housing privatization will be submitted for your review in the near future. As agreed previously, we anticipate this process will satisfy both NEPA and NHPA Section 106 requirements. We propose to close on the MHPI in summer 2007. The potential developer is aware Belle Chance is an NRHP-eligible property. Accordingly, attached to this letter of transmittal are the following documents to obtain your agreement on the Air Force finding of no adverse effect:

Quit Claim Deed—The deed will be used to convey title to the historic dwellings to the developer. The Deed included a Preservation Covenant that places obligations upon the developer relating to the historic dwellings. The proposed language of the covenant is contained in Schedule F to the quit claim deed. The Deed also includes a description of the historic buildings situated on the leased land at Exhibit F-1. Both the description and covenant will become part of the Quit Claim Deed to be recorded in Prince Georges County, Maryland.

Draft Letter Agreement—For your convenience, we have taken the liberty of drafting a Letter Agreement between Air Force and the Trust. The purpose of the Letter Agreement is to provide a framework for your approval of the proposed conveyance of Belle Chance and finding of no adverse effect for this undertaking, supported by the Preservation Covenant required by 36 CFR 800.5 (b) and (c)(1). The draft Letter Agreement addresses three topics: (1) the Trust's determination that the Preservation Covenant satisfies the requirements described above; (2) certain proposed related agreements between the Air Force and the Trust; (3) notification that the Air Force intends to comply with Section 106 of the NHPA and the associated federal regulations through the NEPA process as permitted by 36 CFR 800.8(c).

We look forward to continuing our joint efforts to manage Belle Chance in a manner consistent with the Maryland Historical Trust mission. We request Trust place the Letter Agreement on Trust letterhead, sign it, and return it to the Air Force for counter-signature. We will provide the letter agreement electronically to your staff as requested. Please contact Mr. Joe Brown at (301) 981-2579 or Mr. John Franz at (301) 981-7120 to provide comments or questions.

Sincerely



BRIAN P. DUFFY, Lt Col, USAF

Attachments:

1. Insert to Quit Claim Deed
2. Draft Letter Agreement

cc:

316 WG/JA

316 CES/CEV

HQ AFDW/CCX

HQ AMC/A7PC

HQ AMC/A7QE

HQ AMC/A7VQ

HQ AMC/JAV

AFCEE/HDP

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 316TH WING (AFDW)



MAY 24 2007

Colonel Paul R. Ackerley
Commander, 316th Wing
1535 Command Drive, Suite AB-203
Andrews AFB MD 20762-7001

Mr. J. Rodney Little
Director/State Historic Preservation Officer
Maryland Historical Trust
100 Community Place
Crownsville MD 21032

**Re: Historic Preservation Restrictions Pertaining to Certain National Register of
Historic Places (NHRP)-Eligible Housing Located at Andrews Air Force Base (AFB)**

Dear Mr. Little

This letter is written in connection with a certain residence (Building 1966), garage (Building 1967) and shed (Building 1968) that are eligible for listing (Maryland Inventory of Historic Properties Form PG 77-14) on the National Register of Historic Places (“NRHP”) and located on Andrews Air Force Base in Prince George’s County, Maryland, as more particularly described in Exhibit A attached to this letter and made part hereof (collectively “**Belle Chance**”).

I. Deed Restrictions to Assure Preservation of Belle Chance

By this letter, we request that the Maryland Historical Trust (“**Trust**”) approve a proposed preservation covenant as complying with the requirements of 36 CFR 800.5(b), in order that the undertaking, a transfer of Belle Chance out of federal ownership, not be deemed an adverse effect on the property as described in 36 CFR 800.5(a)(2). In that connection, we advise you of the following:

1. Belle Chance is owned by the United States of America, acting by and through the Secretary of the Air Force (the “**Government**”) and that the Government intends to convey title in Belle Chance and a leasehold interest in the land upon which Belle Chance is situated to a private entity.

2. The Government intends to condition conveyance of title in Belle Chance upon the terms, provisions and restrictions contained in the form of the preservation covenant contained in Exhibit B attached to this letter and made part hereof (the “**Preservation Covenant**”).

3. The terms, provisions and restrictions of the Preservation Covenant are intended to be included in a Quit Claim deed of conveyance to be recorded with the Recorder of Deeds of Prince George’s County and to run with the title to Belle Chance.

4. The Government intends to include in its lease of the land upon which Belle Chance is situated (the “**Belle Chance Land**”) certain terms, provisions and restrictions to prevent the private entity leasing the Belle Chance Land from removing or disturbing any historical, archeological, architectural, or other cultural artifacts, relics or remains and in the event such items are discovered on the Belle Chance Land to further require the private entity to immediately notify the Installation Commander of Andrews AFB (the “**Commander**”) and protect the site and the material from further disturbance until the Commander gives clearance to proceed.

In view of the statements contained in Section I (1) through (4) above, we ask you to agree with the Air Force finding of no adverse effect based upon your determination that, upon its recording, the Preservation Covenant will satisfy the provisions of 36 CFR 800.5 by providing for adequate and legally enforceable restrictions to ensure the long-term preservation of the

property's historic significance upon the transfer, lease or sale of the property out of federal ownership or control.

II. Additional Agreements between the Government and the Trust

We propose that the Government and the Trust agree upon the following additional terms and provisions relating to the preservation of Belle Chance:

1. Notwithstanding the Trust's right, pursuant to Section II. D of the Preservation Covenant, to elect to sue the Grantee to enforce or remedy any violation of the provisions of the Preservation Covenant ("**Violation**"), the Trust recognizes that unique considerations associated with the use of Government property leased to private parties requires that the Government have the right, but not the obligation, to take action to enforce the requirements of the Preservation Covenant prior to any civil action being filed or initiated by the Trust against the Grantee. Accordingly, prior to filing or otherwise initiating any civil action against the Grantee, the Trust shall provide written notice to the Government of the Trust's intent, together with an explanation of the basis therefor. The Government shall thereafter have the right, but not the obligation, to take responsibility for enforcing the Preservation Covenant and shall independently determine whether the matters reported by the Trust as giving rise to the Violation constitute a breach of the Preservation Covenant. If the Government determines that a Violation has occurred, the Government shall provide written notification to the Trust of its proposed resolution of the matter and the Trust agrees to allow the Government to resolve the Violation in accordance with the Andrews AFB Lease and the Master Development and Management Agreement. Thereafter, the Government's action with respect to such Violation shall be final and conclusive of the matter and the Trust shall have no further responsibility or right to seek the enforcement or other

remedy of the Violation. In the event the Government determines that a Violation has not occurred, or if the Trust disagrees with the remedy proposed by the Government to resolve a Violation, the Government shall consult with the Trust in order to resolve their differences over the matter. If such consultations between the Government and the Trust do not satisfactorily resolve the disputed issue, the Government and the Trust shall invite the ACHP to participate in the consultation consistent with 36 C.F.R. 800.6. Any agreement between the ACHP, the Trust, and the Government (the "Parties") regarding resolution of a disputed issue shall be in the form of a Memorandum of Agreement consistent with 36 C.F.R. 800.6(c). Failure of the Parties to agree on resolution of a disputed issue shall result in the termination of consultation among the parties consistent with the provisions of 36 C.F.R. 800.7. If the Government notifies the Trust in writing that it does not intend to take such responsibility for enforcing the Preservation Covenant, the Trust may take such actions pursuant to Section II. D of the Preservation Covenant as it deems appropriate pursuant to its authority.

2. A failure by the Trust or the Government to exercise any right or remedy arising from the Preservation Covenant or that is otherwise available under the law should not operate as a waiver or limitation upon the right of either of them to exercise any other right or remedy available under the law.

By endorsement to this letter, the Trust hereby agrees to the proposed agreements described in Sections II (1) and (2) of this letter above.


III. NEPA Process in Lieu of Section 106 Process

The Trust hereby acknowledges that the Government has notified it in advance of the undertaking that the Government will satisfy its responsibilities under Section 106 of the

National Historic Preservation Act through the use of the process and documentation required for the preparation of an Environmental Assessment/Finding of No Significant Impact under the National Environmental Policy Act, as provided for in 36 CFR 800.8(c), in lieu of the procedures set forth in 36 CFR 800.3 through 800.6.

Please feel free to call if you have any questions concerning the contents of this letter.

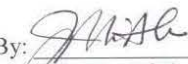
United States of America, acting by and through the Secretary of the Air Force

By: 
PAUL R. ACKERLEY, Colonel, USAF
Commander, 316th Wing
Andrews AFB, Maryland

Date Signed: 24 May 2007

This Request is hereby approved and the Trust hereby concurs with and accepts the Terms and Provisions set forth herein.

Maryland Historical Trust

By: 
J. Rodney Little
Director and State Historic Preservation Officer
State of Maryland

Date Signed: 5-30-07

Attachments:

1. Exhibit A (Belle Chance)
2. Exhibit B (Preservation Covenant)

EXHIBIT A
BELLE CHANCE

EXHIBIT F-1 TO THE QUITCLAIM DEED

DESCRIPTION OF BELLE CHANCE

Belle Chance is identified as that property within the boundaries established below on the attached metes and bounds survey.

<u>Bldg No.</u>	<u>Bldg Name</u>	<u>Year Built</u>
Bldg 1966	Belle Chance Residence	1912
Bldg 1967	Belle Chance Shed	1912
Bldg 1968	Belle Chance Garage	1912

<u>Archeological Site No.</u>	<u>Site Type</u>	<u>Date</u>
18PR447	Farm House	18-19 th Century

EXHIBIT B
PRESERVATION COVENANT

EXHIBIT F TO THE QUITCLAIM DEED

PRESERVATION COVENANT

SECTION I

A. This Preservation Covenant (the “**Preservation Covenant**”) is an exhibit to that certain Andrews AFB Quitclaim Deed (the “**Deed**”) dated as of _____, 2007, executed by the United States of America, acting by and through the Secretary of the Air Force (the “**Government**”) and also executed and accepted by [AMC East] Communities, LLC (the “**Grantee**”). (The term “Grantee” shall mean and include for purposes of this Preservation Covenant, the Grantee and its successors and assigns.)

B. Section 3 of the Deed establishes certain terms, conditions and restrictions relating to the preservation of certain improvements, consisting of a residence, garage and shed, which are eligible for listing on the National Register of Historic Places and are located on Andrews AFB in Prince George’s County, Maryland (collectively “**Belle Chance**”) as more particularly described in Exhibit F-1, attached hereto and made part hereof.

C. Prior to delivery and acceptance of the Deed, the Government was the owner of title to Belle Chance. By delivery and acceptance of the Deed, the Government has, or will have, transferred all right and title in Belle Chance to the Grantee, together with a grant of leasehold rights in the land upon which Belle Chance are situated pursuant to Department of the Air Force Lease of Property on Andrews Air Force Base, Prince

George's County, Maryland, with a term beginning on _____, 2007 (the "**Andrews AFB Lease**").

D. Pursuant to Section 3 of the Deed, the Grantee is required to comply at all times with the terms, conditions and restrictions described below in Section II of this Preservation Covenant.

SECTION II

The Grantee shall comply at all times with the following:

A. The Grantee shall maintain and preserve Belle Chance in accordance with the recommended approaches of the "Secretary of the Interior's Standards for the Treatment of Historic Properties" (36 CFR 68) in order to preserve those qualities that make Belle Chance eligible for listing on the National Register of Historic Places.

B. The Grantee shall undertake no demolition, construction, alteration or rehabilitation that would affect the historic features of Belle Chance without first consulting with, and obtaining the prior written permission from, the Maryland Historical Trust (the "**Trust**") and, with respect to demolition of an entire structure, the prior written permission of both the Trust and the Government, or from authorized representatives thereof in accordance with applicable law.

C. The Grantee shall allow the Trust, or its designee, at all reasonable times and upon reasonable advance written notice to Grantee, to inspect Belle Chance in order to ascertain whether Grantee is complying with the terms, conditions and restrictions of this Preservation Covenant.

D. The Grantee acknowledges the right of the Government and the Trust, in addition to any other remedy available to either party now or hereafter under the law, to seek enforcement of this Preservation Covenant in the event of a violation of any of the terms, provisions or restrictions hereof and the Grantee further acknowledges the right of the Government and the Trust, or either of them, to institute suit to enjoin any said violation or require the restoration of Belle Chance, so long as reasonable notice thereof has been provided to the Grantee.

E. The Grantee acknowledges that the terms, provisions and restrictions contained in this Preservation Covenant are binding upon the Grantee and impose a servitude upon Belle Chance in perpetuity and that this Preservation Covenant shall be deemed to run with the title to Belle Chance and are binding upon the Grantee in perpetuity.

F. During the term of the Andrews AFB Lease and any extension thereof, the Grantee shall insert the terms, conditions and restrictions of this Preservation Covenant verbatim, or by express reference, in any deed or other legal instrument by which the Grantee divests itself of any interest in Belle Chance or any part thereof.

G. The Grantee acknowledges that any failure of the Trust or the Government to exercise any right or remedy arising from this Preservation Covenant or arising from other terms and provisions contained in Section 3 of the Deed, shall not constitute a waiver by, or limitation upon, the right of the Trust or the Government to exercise or use any other right or remedy at any time.

H. The Grantee shall have the right to request of the Trust that it modify or cancel any or all of the terms, provisions or restrictions imposed upon the Grantee or Belle

Chance and also the right to request approval from the Trust of a determination establishing the types of work that may be deemed by the Trust to have no adverse effect on Belle Chance; *provided, however, that* the Government receives prior written notice of any such requests and thereafter notifies the Grantee and the Trust in writing that it will not object to such requests or to any portion or aspect thereof.

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APPENDIX E

REQUIRED AND DESIRED FEATURES FOR PRIVATIZED ANDREWS AFB MFH UNITS

Appendix E

Required and Desired Features for Privatized Andrews AFB MFH Units

New Housing Construction

Design and construction of all new housing units shall provide the following:

General Requirements. Designs and construction shall comply with all applicable codes, standards, and regulations; meet basic requirements described herein; and shall be appropriate to the climate and lifestyle of the area. Designs shall provide innovative design and construction techniques conforming to local market (private-sector) standards for quality housing. The local market area is defined as being within a 60-minute or 20-mile commute (whichever is greater) during peak driving conditions. Best professional judgment shall be exercised in choice of style, type, design, configuration, functional solutions, and materials. Each housing area shall have an identification sign at the entrance of each neighborhood.

Floor Plans. Floor plans shall incorporate orderly arrangement of functions, minimize circulation, and maximize open spaces. Designs shall provide inviting entrances, indoor/outdoor integration, and pleasing interior appearance. Kitchens shall have a modern, well-organized work area with quality fixtures, appliances, and finishes. Layout of bathrooms shall follow modern planning techniques and utilize quality fixtures. Maximized storage space is an essential element due to the mobility of Air Force families. Interior storage shall include conveniently located and adequately sized cabinets; and coat, linen, pantry, bulk storage, and clothes closets. Exterior storage shall include maximized space for bikes and mowers.

Handicap Accessibility. At least 5 percent of the total end-state number of housing units shall be compliant with the Americans with Disabilities Act (ADA), meaning either handicap accessible, or “readily adaptable” to be accessible, including entrance ramps, bathroom grab bars, and chair lifts. “Accessible” means the units can be approached, entered, and used by physically handicapped people. Modifications shall be accomplished on a high-priority basis when a requirement is identified. The housing units shall comply with the accessibility standards set forth in all applicable Federal, state, or local laws pertaining to accessibility, together with the Fair Housing Act (FHA) and the relevant provisions of the Uniform Federal Accessibility Standards (UFAS) dealing with accessibility. In complying with said authorities, the developer shall abide by those provisions that are the most stringent. Should the developer choose to make the premises “readily adaptable” then the developer shall bear the cost of making the housing units accessible at its sole expense.

Elevations. Elevation designs shall provide pleasing and interesting appearances, comparable to other quality residential developments currently being built and marketed in the area. The elevations shall be inviting with modulated facades, rooflines, and massing to provide interest. Materials and colors shall be varied to break up facades of larger structures and prevent excessive uniformity among the smaller units.

Energy Efficiency. Design, materials, equipment, and construction methods shall reduce energy and water consumption to current Energy Star criteria. Design features shall include optimizing glass locations and areas; optimizing insulation in exterior walls, ceilings, and between adjoining units; weatherstripping throughout; and minimizing duct leakage. Attention to construction details, exterior fenestration materials, and passive solar energy systems shall be employed wherever possible.

Materials, Equipment, and Finishes. Materials, equipment, and finishes shall be durable, low maintenance, and functional. Choice of finishes shall be aesthetically pleasing with a richness of texture

and detailing. Basic quality features include copper potable water plumbing, copper electrical wiring, dual-pane insulated windows and patio doors, storm doors with screens at main entrances, and overhead lighting in bedrooms and large closets.

Attached Units. Stacked units are not acceptable. No more than six dwelling units per building shall be constructed. Units shall include privacy features including a Sound Transmission Class (STC) rating of 55 between living units.

Parking and Roads. All units shall have provisions for parking two vehicles off-street. Additional parking spaces shall be provided throughout the neighborhoods for guest parking at a rate of 1 parking space for every 2 units except for General Officers Quarters (GOQ), Senior Officers Quarters (SOQ), and Prestige units which shall have nearby guest parking available for additional vehicles per unit. All attached units shall have a one-car garage with an automatic door opener. All single-family detached units shall have a two-car garage with an automatic door opener. All roads and turns shall be large enough to allow moving vans, fire trucks, and other large vehicles to adequately move around the community as needed, and all roads and parking areas shall have adequate snow stacking capacity and storm drainage.

Privacy. All units shall have patios with screened fencing or landscaping to provide a private area in the rear of each unit.

Window Treatments. The developer shall provide window coverings (such as mini-blinds) in all units.

Floor Finishes. All units shall have high quality, durable, low-maintenance hard finish flooring in kitchen, informal dining area, wet areas, and high traffic areas. All units shall have carpet in bedrooms and other living areas.

Appliances. All appliances shall be energy-efficient, new, and from an established manufacturer. Each housing unit shall be provided with the following items:

- Combination refrigerator/freezer (minimum 18 cubic feet [ft³] for 2-bedroom units and 21 ft³ for 3-and 4-bedroom units).
- Built-in two-level dishwasher.
- Four-burner stove with self-cleaning oven, view window, and vent hood.
- Built-in microwave oven.
- Garbage disposal.
- Carbon monoxide detector.
- Interior floor space and connections shall be provided for a full size washer and dryer (electric and natural gas connections).
- Interior floor space and connections for a full-size freezer.

Equipment. All units shall be provided with high-energy efficient heating and ventilation. Central air conditioning systems shall be new and from an established manufacturer.

Telephone and Cable. All residential units shall be prewired for cable television (CATV) and telephone jacks. Telephone systems shall be in accordance with those standards set forth by the local telephone company. Each bedroom, living area, and kitchen shall have one phone jack that can accommodate two

lines and one cable outlet. The coordination of equipment locations and final design of utilities and services is subject to review by the government. A fiber-to-the-home (FTTH) network or equivalent network solution is preferred in this residential privatization project that supports the delivery of bundled voice, video, data, and other emerging technologies as they become available in the marketplace. All telephone and cable installations shall conform with Telecommunications Industry Association (TIA) and Electronics Industry Alliance (EIA) Telecommunications Building Wiring Standard 570 section 3 (Single Dwelling residence Infrastructure) and section 4 (Multi dwelling). There are two acceptable standards: (1) grade 1 twisted pair CAT 5E or CAT 6, recommended and coaxial jacks to every room; and (2) Grade 2 twisted pair, coaxial, and fiber to every room. The project owner shall coordinate with Verizon and install Cat 6 cable and coaxial jacks in every room except bathrooms of each of the 887 end-state housing units.

Mailboxes. The developer shall provide cluster mailboxes for all units in accordance with U.S. Postal Service regulations. Single mailboxes for the GOQ, SOQ, and Prestige Family Housing units shall be provided.

Utilities. All new utility systems shall be designed and constructed by the developer. The developer shall coordinate all tie-in locations with the government. The developer shall provide for the installation of all utility meters. All newly constructed units must have individual electric and natural gas meters. Utilities shall be connected to a utility provider by the developer by the end of the Transition Period.

Termite Treatment. New foundations shall have soil treated for termites in accordance with state law, to include a certificate of termite treatment by the provider.

Exterior Features. Easily accessible hose bibs and exterior electrical outlets on the front and rear of the house shall be provided. Hidden trash container storage area shall be provided.

Specific Requirements

In addition to the above General Requirements, proposed designs and construction shall provide the following:

Prestige Family Housing (E-9). Prestige housing may be detached single-family or attached multifamily-type housing. Any Prestige Family Housing units constructed at Andrews AFB shall be completed and ready for occupancy prior to the demolition of the existing Prestige Family Housing units. Prestige Housing shall meet at a minimum the following standards:

- A geographically separate location in base housing
- Garages with automatic door openers and storage space
- Additional off-street parking
- Larger, enhanced patios with privacy screening
- Central air conditioning in all habitable areas
- Carpeted or upgraded floor treatments
- Ceiling fans and upgraded mini-blinds or other window treatments
- Upgraded kitchens and appliances
- At least two full bathrooms

Prestige Housing for all designated key and essential E-9 positions shall have 4 bedrooms. Newly constructed units to be designated for the Command Chiefs, shall be single-family detached units, at least 10 percent larger than the largest E-9 unit.

General Officers Quarters (O-7+). Any housing and associated improvements for General Officers (O-7+) shall be designed and constructed as single-family detached units. The design of any GOQs that are constructed at Andrews AFB shall be in conjunction with local architectural and climatic conditions. If any new GOQs are constructed, those units shall be completed and ready for occupancy prior to the demolition of the existing GOQs. Refer to Table E-1 for the square footage requirements for GOQ units.

Table E-1. GOQ and SOQ Housing Requirements for New Construction

	Four bedroom	
	O-6	O-7 to O-10
Minimum Gross (ft ²)	2,110	2,600
Programming Benchmark (ft ²)	2,520	3,330
Maximum Gross (ft ²)	2,920	4,060

Notes:

All interior spaces within the exterior faces of exterior walls of housing units with the following areas of exclusion: carports and garages, exterior bulk storage (detached), trash enclosures, porches, terraces, patios, balconies, and entrance stoops.

Two-car garages would be provided for detached homes.

The developer shall provide quality finishes for the floor, architectural millwork, wall base, walls, ceilings, window treatments and coverings, light fixtures, entryway, staircases (if applicable), cabinetry, countertops, and appliances for each habitable area. The developer shall also use quality roof materials, exterior wall finishes, exterior window and door finishes, and upscale landscaping.

In addition to standard residential telephone service, the developer shall supply and install a minimum of 2 telephone lines, 2 CATV lines, 1 fiber optic line, and 1 Unshielded Twisted Pair (UTP) where available in the local community. The developer shall also supply associated terminals and distribution boxes to be designated only for government use for each unit. The location within the units shall be the same as for the regular telephone boxes. The government shall own and maintain the terminals, cable, and the distribution box after installation. Telecommunication standard 568A shall apply to dedicated government cable.

Senior Officers Quarters (O-6). Any housing and associated improvements for Senior Officers (O-6) shall be designed and constructed as single-family detached units. If any new SOQs are constructed, those units shall be completed and ready for occupancy prior to the demolition of the existing SOQs. In addition to standard residential telephone service, the developer shall supply and install a minimum of 2 telephone lines, 2 CATV lines, 1 fiber optic line, and 1 UTP where available in the local community. The developer shall also supply associated terminals and distribution boxes to be designated only for government use for each unit. The location within the units shall be the same as for the regular telephone boxes. The government shall own and maintain the terminals, cable, and the distribution box after installation. Telecommunication standard 568A shall apply to dedicated government cable. The SOQ designs shall provide ample area for entertaining dignitaries and officials. Refer to Table E-1 for the square footage requirements for SOQs.

Enlisted and Non-Senior Officer Housing (E-1 to E-8 and O-1 to O-5). Any design and construction of Enlisted and Non-Senior Officer Housing units and associated improvements shall be a mixture of multiplex and detached single-family housing. Construction shall be complete within 5 years of project closing. Table E-2 shows the type units per grade, broken down by square footage according to the minimum, programming benchmark, and maximum size.

Table E-2. Enlisted and Non-Senior Officer Housing Requirements for New Construction

	Two-bedroom Modified		Three-bedroom			Four-bedroom		
	E-1 to E-6	E-7 to E-8 and O-1 to O-3	E-1 to E-6	E-7 to E-8 and O-1 to O-3	E-9 and O-4 to O-5	E-1 to E-6	E-7 to E-8 and O-1 to O-3	E-9 and O-4 to O-5
Minimum Gross (ft ²)	1,330	1,420	1,490	1,670	1,740	1,670	1,800	1,920
Benchmark Gross (ft ²)	1,480	1,670	1,630	1,860	2,020	1,950	2,150	2,310
Maximum Gross (ft ²)	1,630	1,920	1,760	2,050	2,300	2,220	2,500	2,700

Notes:

All interior spaces within the exterior faces of exterior walls and center line of party walls (in multiplex units) of housing units, with the following areas of exclusion: garages, exterior bulk storage (detached), trash enclosures, porches, terraces, patios, balconies, and entrance stoops.

Two-car garages would be provided for detached homes and one-car garages for multiplex family units.

Two-Bedroom Modified Units. The developer shall design and construct two-bedroom modified units with an additional room between 110–120 net square feet to provide flexible living space for residents and would be designed to serve as a family room, bedroom, den, or playroom. The additional room shall include a closet. The two-bedroom modified design shall also include an additional three-quarters-size bathroom between 45 and 50 net square feet. The three-quarters-bath shall include, at a minimum, a vanity sink, toilet, and shower.

Desired New Housing Construction Features

The desired features listed below are in descending order of importance.

- Newly constructed units in lieu of renovated units
- Additional square footage above the programming benchmark
- More single-family units in lieu of multiplex units
- Three-bedroom units in lieu of two-bedroom units
- Two-car garage in all units with automatic door openers
- Reduced number of dwelling units per building
- Larger master bedroom suites
- Covered patios/ground level decks

- Additional bathrooms above minimum requirements
- Increased acoustical separations above minimums (provide better soundproofing between units)
- Access to front and rear of unit through house and garage
- Additional interior storage including walk-in closets and closet rack system
- Bathroom upgrades
- Kitchen upgrades (i.e., upgrade countertops and cabinets)
- More kitchen storage space (pantry and drawers)
- Double sinks in bathrooms
- Upgraded flooring
- Wiring all rooms to accommodate home communications system (hi-speed Internet, CATV, and telephone)
- Enhanced security (including motion lights)
- Ceiling fans with light fixtures
- Water filters
- Exceed 5 percent of homes ADA compliance rate
- Door chime on second floor and door bell at back door
- Overhead lighting in all rooms, switched at the entry door
- Programmable thermostats
- Finished basement with exterior access
- Increase soundproofing between attached units
- Additional interior storage including closet rack systems
- Additional exterior storage space
- Fenced rear yard for each unit (privacy fence)
- Two-car garages for all units
- Laundry/mudroom with utility sink
- Up-to-date Internet/communications technology and wiring
- Covered patios
- Fireplaces
- Built-in microwave ovens

Renovation

General Requirements for Renovation. General Requirements for New Construction shall be used to the extent possible in the renovation of existing units. If any Prestige, General Officer, or Senior Officer housing is to be renovated, the requirements for that housing shall be followed. Renovation size requirements for General and Senior Officer Quarters Housing are as shown in Table E-3, and Enlisted and Non-Senior Officer Housing are shown in Table E-4.

Table E-3. GOQ and SOQ Housing Requirements for Renovation

	Four Bedroom	
	O-6	O-7 to O-10
Minimum Gross (ft ²)	1,930	2,380
Benchmark Gross (ft ²)	2,110	2,600
Maximum Gross (ft ²)	2,520	3,330

Note:

All interior spaces within the exterior faces of exterior walls and center line of party walls (in multiplex units) of housing units with the following areas of exclusion: carports and garages, exterior bulk storage (detached), trash enclosures, porches, terraces, patios, balconies, and entrance stoops.

Table E-4. Enlisted and Non-Senior Officer Housing Requirements for Renovation

	Two-Bedroom Modified		Three-Bedroom			Four-Bedroom		
	E-1 to E-6	E-7 to E-8 and O-1 to O-3	E-1 to E-6	E-7 to E-8 and O-1 to O-3	E-9 and O-4 to O-5	E-1 to E-6	E-7 to E-8 and O-1 to O-3	E-9 and O-4 to O-5
Minimum Gross (ft ²)	1,220	1,300	1,370	1,530	1,590	1,530	1,650	1,760
Benchmark Gross (ft ²)	1,330	1,420	1,490	1,670	1,740	1,670	1,800	1,920
Maximum Gross (ft ²)	1,480	1,670	1,630	1,860	2,020	1,950	2,150	2,310

Notes:

All interior spaces within the exterior faces of exterior walls and center line of party walls (in multiplex units) of housing units with the following areas of exclusion: carports and garages, exterior bulk storage (detached), trash enclosures, porches, terraces, patios, balconies, and entrance stoops.

Two-car garages would be provided for detached homes and 1 one-car garages for multiplex family units.

The above columns stating “Maximum” gross square footages are furnished only as information on maximum gross square footages applicable to military construction projects, and are not to be construed as an upper limitation on unit gross square footage sizes which would be acceptable.

Desired Renovation Features

Desired renovation features listed below are in descending order of importance.

- Newly constructed units in lieu of renovated units (excluding historic units)
- Additional square footage above the programming benchmark
- Access to front and rear of unit through house and garage
- More single-family units in lieu of multiplex units

- Reduced number of dwelling units per building
- Walk-in clothes closets
- Double sinks in bathrooms
- Ceiling fans with light fixtures
- Overhead lighting in all rooms, switched at the entry door
- Programmable thermostats
- Finished basement with exterior access
- Increase soundproofing between attached units
- Additional interior storage including closet rack systems
- Additional exterior storage space
- Fenced rear yard for each unit (privacy fence)
- Two-car garages for all units
- Laundry/mudroom with utility sink
- Up-to-date Internet/communications technology and wiring
- Covered patios
- Fireplaces
- Built-in microwave ovens

APPENDIX F
AIR QUALITY EMISSIONS CALCULATIONS SPREADSHEETS

- Summary** Summarizes total emissions by calendar year (Page F-1)
- Combustion** Estimates emissions from non-road equipment exhaust as well as painting. Proposed Action (Pages F-2, F-3, F-4, and F-5)
- Fugitive** Estimates fine particulate emissions from earthmoving, vehicle traffic, and windblown dust Proposed Action (Pages F-6, F-7, and F-8)
- Grading** Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions Proposed Action (Page F-9)
- National Capital Tier Report** Summarizes total emissions for the National Capital Interstate AQCR Tier Reports for 2001, to be used to compare project to regional emissions (Page F-10)

Total Emissions from Proposed Action

	NO_x (ton)	VOC (ton)	CO (ton)	SO₂ (ton)	PM₁₀ (ton)
Proposed Action CY2007 - CY2012	10.704	1.889	13.255	0.292	0.346
Construction Combustion					0.346
Construction Fugitive Dust					10.779
<i>Project Total (2007-2012)</i>	10.704	1.889	13.255	0.292	11.125

Emissions shown above are only for one calendar year. Emissions would be the same for each calendar year.

Since future year budgets were not readily available, actual 2001 air emissions inventories for the counties were used as an approximation of the regional inventory. Because the Proposed Action is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

National Capital Interstate AQCR

Year	Point and Area Sources Combined				
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO₂ (tpy)	PM₁₀ (tpy)
2001	145,217	133,892	1,025,407	121,299	66,741

Source: USEPA-AirData NET Tier Report (<http://www.epa.gov/air/data/geosel.html>). Site visited on 04/17/06.

Determination Significance (Significance Threshold = 10%)

	Point and Area Sources Combined				
	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO₂ (tpy)	PM₁₀ (tpy)
Minimum - 2001	145,217	133,892	1,025,407	121,299	66,741
Proposed Action 2007-2014 Emissions	10.704	1.889	13.255	0.292	11.125
Proposed Action %	0.0074%	0.0014%	0.0013%	0.0002%	0.0167%

Construction Combustion Emissions - Proposed Action

Combustion Emissions of VOC, NOx, SO2, CO and PM10 Due to Construction

Includes:

1 Construct Military Family Housing Units	83,119 ft ²	1.908	acres	(assumed average 1,933 ft ² for each home built)
2 Demolish Military Family Housing Units	212,750 ft ²	4.884	acres	(assumed average 1,500 ft ² for each home demolished)
3 Pave New Military Family Housing Driveways	80,625 ft ²	1.851	acres	(assumed average 1,875 ft ² for each driveway)
Total Building Construction Area:	83,119 ft ²	(1)		
Total Demolished Area:	212,750 ft ²	(2)		
Total Paved Area:	80,625 ft ²	(3)		
Total Disturbed Area:	376,494 ft ²	(1-3)		
Construction Duration:	1.0 year(s)			
Annual Construction Activity:	230 days/yr			

Assumptions

The project will be conducted over a 6 year period starting in Calendar Year (CY) 2007 and ending on CY 2012

All demolition estimates were based off gross square footage and were divided over a 6 year period.

All construction estimates were based off averaging all benchmark square footages provided and were divided over a 6 year period.

Each new home would require a driveway. All driveways would be 1,875 ft² (25 ft x 75 ft).

Project Total (2007-2012)

Private developer would demolish 851 housing units.

Emission Factors Used for Construction Equipment

Reference: Guide to Air Quality Assessment, SMAQMD, 2004

Emission factors are taken from Table 3-2. Assumptions regarding the type and number of equipment are from Table 3-1 unless otherwise noted.

Grading

Equipment	No. Req ^d . ^a per 10 acres	NOx (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c	PM ₁₀ (lb/day)
Bulldozer	1	29.40	3.66	25.09	0.59	1.17
Motor Grader	1	10.22	1.76	14.98	0.20	0.28
Water Truck	1	20.89	3.60	30.62	0.42	0.58
Total per 10 acres of activity	3	60.51	9.02	70.69	1.21	2.03

Paving

Equipment	No. Req ^d . ^a per 10 acres	NOx (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c	PM ₁₀ (lb/day)
Paver	1	7.93	1.37	11.62	0.16	0.22
Roller	1	5.01	0.86	7.34	0.10	0.14
Total per 10 acres of activity	2	12.94	2.23	18.96	0.26	0.36

Demolition

Equipment	No. Req ^d . ^a per 10 acres	NOx (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c	PM ₁₀ (lb/day)
Loader	1	7.86	1.35	11.52	0.16	0.22
Haul Truck	1	20.89	3.60	30.62	0.42	0.58
Total per 10 acres of activity	2	28.75	4.95	42.14	0.58	0.80

Building Construction

Equipment ^d	No. Req ^d . ^a per 10 acres	NOx (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c	PM ₁₀ (lb/day)
Stationary						
Generator Set	1	11.83	1.47	10.09	0.24	0.47
Industrial Saw	1	17.02	2.12	14.52	0.34	0.68
Welder	1	4.48	0.56	3.83	0.09	0.18
Mobile (non-road)						
Truck	1	20.89	3.60	30.62	0.84	0.58
Forklift	1	4.57	0.79	6.70	0.18	0.13
Crane	1	8.37	1.44	12.27	0.33	0.23
Total per 10 acres of activity	6	67.16	9.98	78.03	2.02	2.27

Note: Footnotes for tables are on following page

Architectural Coatings

Equipment	No. Reqd. ^a per 10 acres	NOx (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c	PM ₁₀ (lb/day)
Air Compressor	1	6.83	0.85	5.82	0.14	0.27
Total per 10 acres of activity	1	6.83	0.85	5.82	0.14	0.27

- a) The SMAQMD 2004 guidance suggests a default equipment fleet for each activity, assuming 10 acres of that activity, (e.g., 10 acres of grading, 10 acres of paving, etc.). The default equipment fleet is increased for each 10 acre increment in the size of the construction project. That is, a 26 acre project would round to 30 acres and the fleet size would be three times the default fleet for a 10 acre project.
- b) The SMAQMD 2004 reference lists emission factors for reactive organic gas (ROG). For the purposes of this worksheet ROG = VOC.
- c) The SMAQMD 2004 reference does not provide SO₂ emission factors. For this worksheet, SO₂ emissions have been estimated based on approximate fuel use rate for diesel equipment and the assumption of 500 ppm sulfur diesel fuel. For the average of the equipment fleet, the resulting SO₂ factor was found to be approximately 0.04 times the NOx emission factor for the mobile equipment (based upon 2002 USAF IERA "Air Emissions Inventory Guidance") and 0.02 times the NOx emission factor for all other equipment (based on AP-42, Table 3.4-1)
- d) Typical equipment fleet for building construction was not itemized in SMAQMD 2004 guidance. The equipment list above was assumed based on SMAQMD 1994 guidance.

PROJECT-SPECIFIC EMISSION FACTOR SUMMARY

Source	Equipment Multiplier*	SMAQMD Emission Factors (lb/day)				
		NOx	VOC	CO	SO ₂ **	PM10
Grading Equipment	1	60.51	9.02	70.69	1.21	2.03
Paving Equipment	1	12.94	2.23	18.96	0.26	0.36
Demolition Equipment	1	28.75	4.95	42.14	0.58	0.80
Building Construction	1	67.16	9.98	78.03	2.02	2.27
Air Compressor for Architectural Coating	1	6.83	0.85	5.82	0.14	0.27
Architectural Coating**			23.50			

*The equipment multiplier is an integer that represents units of 10 acres for purposes of estimating the number of equipment required for the project

**Emission factor is from the evaporation of solvents during painting, per "Air Quality Thresholds of Significance", SMAQMD, 1994

Summary of Input Parameters

	Total Area (ft ²)	Total Area (acres)	Total Days	
Grading:	376,494	8.64	5	(from "Grading" worksheet)
Paving:	80,625	1.85	9	
Demolition:	212,750	4.88	188	
Building Construction:	83,119	1.91	230	
Architectural Coating	83,119	1.91	20	(per the SMAQMD "Air Quality of Thresholds of Significance", 1994 version)

NOTE: The 'Total Days' estimate for paving is calculated by dividing the total number of acres by 0.21 acres/day, which is a factor derived from the 2005 MEANS Heavy Construction Cost Data, 19th Edition, for 'Asphaltic Concrete Pavement, Lots and Driveways - 6" stone base', which provides an estimate of square feet paved per day. There is also an estimate for 'Plain Cement Concrete Pavement', however the estimate for asphalt is used because it is more conservative. The 'Total Days' estimate for demolition is calculated by dividing the total number of acres by 0.02 acres/day, which is a factor also derived from the 2005 MEANS reference. This is calculated by averaging the demolition estimates from 'Building Demolition - Small Buildings, Concrete', assuming a height of 30 feet for a two-story building; from 'Building Footings and Foundations Demolition - 6" Thick, Plain Concrete'; and from 'Demolish, Remove Pavement and Curb - Concrete to 6" thick, rod reinforced'. Paving is double-weighted since projects typically involve more paving demolition. The 'Total Days' estimate for building construction is assumed to be 230 days, unless project-specific data is known.

Total Project Emissions by Activity (lbs)

	NOx	VOC	CO	SO2	PM10
Grading Equipment	302.55	45.10	353.45	6.05	10.15
Paving	116.46	20.07	170.64	2.33	3.24
Demolition	5405.00	930.60	7922.32	108.10	150.40
Building Construction	15446.80	2295.40	17946.90	464.55	522.10
Architectural Coatings	136.60	486.93	116.40	2.73	5.40
Total Emissions (lbs):	21407.41	3778.10	26509.71	583.77	691.29

Results: Total Project Daily and Annual Emission Rates

	NOx	VOC	CO	SO2	PM10
Total Project Emissions (lbs)	21407.41	3778.10	26509.71	583.77	691.29
Total Project Emissions (tons)	10.70	1.89	13.25	0.29	0.35

Construction Fugitive Dust Emissions - Proposed Action

Calculation of PM10 Emissions Due to Site Preparation (Uncontrolled).

User Input Parameters / Assumptions

Acres graded per year:	8.64	acres/yr	(From "Proposed Action Combustion" worksheet)
Grading days/yr:	4.83	days/yr	(From "Proposed Action Grading" worksheet)
Exposed days/yr:	90	assumed days/yr	graded area is exposed
Grading Hours/day:	8	hr/day	
Soil piles area fraction:	0.10	(assumed fraction of site area covered by soil piles)	
Soil percent silt, s:	8.5	%	(mean silt content; expected range: 0.56 to 23, AP-42 Table 13.2.2-1)
Soil percent moisture, M:	85	%	(http://www.cpc.noaa.gov/products/soilmst/w.shtml)
Annual rainfall days, p:	140	days/yr	rainfall exceeds 0.01 inch/day (AP-42 Fig 13.2.2-1, Ave. range from 40-240 days/yr on U.S. coastline)
Wind speed > 12 mph %, I:	35.66	%	Average national windspeed (http://www.epa.gov/ttn/naaqs/ozone/areas/windr/13743.gif)
Fraction of TSP, J:	0.5	per California Environmental Quality Act (CEQA) Air Quality Handbook, SCAQMD, 1993, p. A9-99	
Mean vehicle speed, S:	5	mi/hr	(On-site)
Dozer path width:	8	ft	
Qty construction vehicles:	3.00	vehicles	(From "Proposed Action Grading" worksheet)
On-site VMT/vehicle/day:	5	mi/veh/day	(Excluding bulldozer VMT during grading)
PM10 Adjustment Factor k	1.5	lb/VMT	(AP-42 Table 13.2.2-2 12/03 for PM10 for unpaved roads)
Project Total (2007-2014)	0.9	(dimensionless)	(AP-42 Table 13.2.2-2 12/03 for PM10 for unpaved roads)
PM10 Adjustment Factor b	0.45	(dimensionless)	(AP-42 Table 13.2.2-2 12/03 for PM10 for unpaved roads)
Mean Vehicle Weight W	40	tons	assumed for aggregate trucks

TSP - Total Suspended Particulate

VMT - Vehicle Miles Traveled

Emissions Due to Soil Disturbance Activities

Operation Parameters (Calculated from User Inputs)

Grading duration per acre	4.5 hr/acre	
Bulldozer mileage per acre	1 VMT/acre	(Miles traveled by bulldozer during grading)
Construction VMT per day	15 VMT/day	
Construction VMT per acre	8.4 VMT/acre	(Travel on unpaved surfaces within site)

Equations Used (Corrected for PM10)

Operation	Empirical Equation	Units	AP-42 Section (5th Edition)
Bulldozing	$0.75(s^{1.5})/(M^{1.4})$	lbs/hr	Table 11.9-1, Overburden
Grading	$(0.60)(0.051)s^{2.0}$	lbs/VMT	Table 11.9-1,
Vehicle Traffic (unpaved roads)	$[(k(s/12)^a (W/3)^b)] [(365-P)/365]$	lbs/VMT	Section 13.2.2

Source: Compilation of Air Pollutant Emission Factors, Vol. I, USEPA AP-42, Section 11.9 dated 10/98 and Section 13.2 dated 12/03

Calculation of PM10 Emission Factors for Each Operation

Operation	Emission Factor (mass/ unit)	Operation Parameter	Emission Factor (lbs/ acre)
Bulldozing	0.04 lbs/hr	4.5 hr/acre	0.20 lbs/acre
Grading	0.77 lbs/VMT	1 VMT/acre	0.80 lbs/acre
Vehicle Traffic (unpaved roads)	2.17 lbs/VMT	8.4 VMT/acre	18.30 lbs/acre

Emissions Due to Wind Erosion of Soil Piles and Exposed Graded Surface

Reference: California Environmental Quality Act (CEQA) Air Quality Handbook, SCAQMD, 1993.

Soil Piles EF = $1.7(s/1.5)[(365 - p)/235](I/15)(J) = (s)(365 - p)(I)(J)/(3110.2941)$, p. A9-99.

Soil Piles EF = 11 lbs/day/acre covered by soil piles

Consider soil piles area fraction so that EF applies to graded area

Soil piles area fraction: 0.10 (Fraction of site area covered by soil piles)
 Soil Piles EF = 1.1 lbs/day/acres graded

Graded Surface EF = 26.4 lbs/day/acre (recommended in CEQA Manual, p. A9-93).

Calculation of Annual PM10 Emissions

Source	Emission Factor	Graded Acres/yr	Exposed days/yr	Emissions lbs/yr	Emissions tons/yr
Bulldozing	0.20 lbs/acre	8.64	NA	2	0.001
Grading	0.80 lbs/acre	8.64	NA	7	0.003
Vehicle Traffic	18.30 lbs/acre	8.64	NA	158	0.079
Erosion of Soil Piles	1.10 lbs/acre/day	8.64	90	856	0.428
Erosion of Graded Surface	26.40 lbs/acre/day	8.64	90	20,536	10.268
TOTAL				21,559	10.78

Soil Disturbance EF: 19.30 lbs/acre
 Wind Erosion EF: 27.5 lbs/acre/day

Back calculate to get EF: 516.68 lbs/acre/grading day

Construction (Grading) Schedule - Proposed Action

Estimate of time required to grade a specified area.

Input Parameters

Construction area: 8.64 acres/yr (from "Proposed Action Combustion" Worksheet)
 Qty Equipment: 3.00 (calculated based on 3 pieces of equipment for every 10 acres)

Assumptions.

Terrain is mostly flat.
 An average of 6" soil is excavated from one half of the site and backfilled to the other half of the site; no soil is hauled off-site or borrowed.
 200 hp bulldozers are used for site clearing.
 300 hp bulldozers are used for stripping, excavation, and backfill.
 Vibratory drum rollers are used for compacting.
 Stripping, Excavation, Backfill and Compaction require an average of two passes each.
 Excavation and Backfill are assumed to involve only half of the site.

Project Total (2007-2014)

Reference: Means Heavy Construction Cost Data, 19th Ed., R. S. Means, 2005.

Means Line No.	Operation	Description	Output	Units	Acres per equip-day	equip-days per acre	Acres/yr (project-specific)	Equip-days per year
2230 200 0550	Site Clearing	Dozer & rake, medium brush	8	acre/day	8	0.13	8.64	1.08
2230 500 0300	Stripping	Topsoil & stockpiling, adverse soil	1,650	cu. yd/day	2.05	0.49	8.64	4.23
2315 432 5220	Excavation	Bulk, open site, common earth, 150' haul	800	cu. yd/day	0.99	1.01	4.32	4.36
2315 120 5220	Backfill	Structural, common earth, 150' haul	1,950	cu. yd/day	2.42	0.41	4.32	1.79
2315 310 5020	Compaction	Vibrating roller, 6 " lifts, 3 passes	2,300	cu. yd/day	2.85	0.35	8.64	3.03
TOTAL								14.48

Calculation of days required for the indicated pieces of equipment to grade the designated acreage.

(Equip)(day)/yr: 14.48
 Qty Equipment: 3.00
 Grading days/yr: 4.83

National Capital Interstate Air Quality Control Region

Row #	State	County	Area Source Emissions						Point Source Emissions					
			CO	NOx	PM10	PM2.5	SO2	VOC	CO	NOx	PM10	PM2.5	SO2	VOC
1	DC	Washington city	91,934	13,855	7,262	2,363	6,485	17,741	158	968	398	201	1,715	13.7
2	MD	Montgomery Co	275,752	24,411	14,219	5,644	7,356	30,265	402	8,480	2,997	2,996	33,668	165
3	MD	Prince George's Co	211,044	22,317	9,555	4,196	6,427	24,591	699	12,381	3,610	3,337	38,386	286
4	VA	Arlington Co	47,052	7,448	1,920	718	747	6,755	9.79	11.9	0.85	0.85	0.79	0.64
5	VA	Fairfax Co	282,742	29,894	11,068	4,053	2,760	37,194	403	3,106	82.1	68.2	668	346
6	VA	Loudoun Co	46,790	5,908	8,901	2,187	508	6,299	42.8	78.4	4.54	4.16	22.9	82.2
7	VA	Prince William Co	67,570	9,680	5,559	1,540	795	9,902	808	6,679	1,165	1,016	21,760	251
Grand Total			1,022,884	113,513	58,484	20,701	25,078	132,747	2,523	31,704	8,257	7,623	96,221	1,145

SOURCE:

<http://www.epa.gov/air/data/geosel.html>

*Net Air pollution sources (area and point) in tons per year (1999)

Site visited on 17 April 2006

Geographic Area: District of Columbia; Montgomery Co, MD; Prince George's Co, MD; Arlington Co, VA; Fairfax Co, VA; Loudoun Co, VA; and Prince William Co, VA

Pollutants: Carbon Monoxide, Nitrogen Oxides, Particulate (size < 10 micrometers), Particulate (size < 2.5 micrometers), Sulfur Dioxide, Volatile Organic Compounds

Year: 2001

Project Total (2007-2014)