

ENVIRONMENTAL ASSESSMENT
Proposed Construction and Operation
of a New 70th Intelligence Wing Facility
Fort George G. Meade, Maryland

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August 2005

EXECUTIVE SUMMARY

INTRODUCTION

Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, the Army has prepared this Environmental Assessment (EA) to address the potential environmental and socio-economic impacts of an action currently before the decision maker. This activity is undertaken to satisfy Fort Meade's growing mission as a Federal administrative center. To implement this new mission, Fort Meade must construct and renovate administrative and support facilities.

Construction of a new 70th Intelligence Wing within the National Security Agency Exclusive Use Area is part of Fort Meade's master planning strategy to maintain this mission. This EA analyzes the potential environmental effects of the proposed construction project and its operation under three alternatives: the Proposed Action, No-Action Alternative, and Action Alternative. The potential cumulative effects of this project, in combination with other actions on post and outside Fort Meade, are also evaluated. This EA is based on the most current information available as of March 2005.

BACKGROUND

Fort George G. Meade (Fort Meade) encompasses approximately 5,415 acres in Anne Arundel County, Maryland. Its location is approximately midway between Baltimore, Maryland, and Washington, D.C.

Fort Meade was authorized by Congress in 1917 as a training cantonment during World War I. Fort Meade continued with its training mission until the 8,100-acre range and training area south of MD Route 32 was transferred to the U.S. Fish and Wildlife Service, as part of the first round of closures under the Defense Authorization Amendments and Base Closure Act of 1988 (Public Law 100-526).

There are approximately 114 tenant organizations at Fort Meade, including the Defense Information School, 694th Intelligence Wing, and the National Security Agency. Fort Meade currently has an increased mission as a major federal administrative center and has the need to accommodate additional tenants and activities.

PROPOSED ACTION

Fort Meade has requested the preparation of this EA to address the construction of a new 72,000 square-foot 70th Intelligence Wing (70 IW) facility at the NSA Exclusive Use Area. The Proposed Action would construct a new 70 IW facility between Love Road and 3rd Cavalry Road at NSA. An open paved parking lot with 269 spaces for the facility would be constructed on an existing playing field immediately north of Newjon Road, near 3rd Calvary Road. The purpose of constructing a new 70th Intelligence Wing facility is to support the mission of the 70 IW and 694 IG to communicate at all levels of security in a timely manner with national decision-makers, Theater Commanders, and Warfighters of all the services. The proposed project would facilitate more effective communication between all essential parties by bringing together the now geographically-separated members of the 70 IW in one building with updated, state-of-the-art facilities.

NO-ACTION ALTERNATIVE

Analysis of the No-Action Alternative is prescribed by CEQ regulations and serves as the benchmark against which the environmental and socioeconomic effects of the Proposed Action and other reasonable alternatives can be evaluated. In this EA, the benchmark is the baseline of existing conditions at Fort Meade and adjacent areas as of 2005.

If the No-Action Alternative were selected, the existing 70th Intelligence Wing situation would remain the same and there would be no improvements, expansion, or modification to the existing inadequate facilities. The 70 IW is currently in violation of Air Force regulations 32-1024 and Air Force Handbook 32-1084 owing to the lack of adequate space.

ACTION ALTERNATIVE

Under the action alternative, a new 70 IW facility of the same size and characteristics described for the Proposed Action would be constructed, but at a different site. The action alternative site is located immediately north of Newjon Road, near 3rd Cavalry Road at the site of an existing playing field (Fig. 2-1). The existing paved parking area on the site of the Proposed Action (immediately west of 3rd Calvary Road) would be used for parking for the new facility. The construction of building and paved areas would be situated on the parcel in a manner that would

comply with all regulatory requirements and address issues pertaining to existing natural resources (LaSalle 2005). The proposed site under this Alternative has been considered because of its proximity to other NSA facilities (LaSalle 2005). As with the Proposed Action site, the action alternative site would provide a relatively easily developable parcel (both sites were previously disturbed) with no significant environmental effect.

REGULATORY REQUIREMENTS

The Proposed Action will comply with all applicable regulations. Construction permits will be obtained for soil and erosion control, floodplain effects, and storm water discharge during construction. Wetlands and cultural resources will be avoided. Mitigation of potential adverse impacts on each resource will be included in all planned construction or renovation activities.

ENVIRONMENTAL CONSEQUENCES

Potential environmental impacts associated with implementing the Proposed Action, No-Action Alternative, and Action Alternative are summarized in Table ES-1. No significantly adverse individual or cumulative environmental impacts to resources have been identified as a result of the construction and operation of the 70th Intelligence Wing facility under the Proposed Action, No-Action Alternative, or Action Alternative.

CONCLUSION

The No-Action Alternative, as described under baseline conditions, would not meet the purpose of and need for the project, because the 70 IW and 694 IG would continue to operate in geographically separated locations, resulting in decreased effectiveness of a unit responding to National Intelligence tasks. Command and control of the largest intelligence wing in the Air Force would continue to be hindered by the time delay in internal communications. Additionally, 40 airmen will continue to be denied access to Unaccompanied Enlisted Personnel housing and an additional 20 airmen will be required to live off post in order to meet current facility space requirements. The ability of the 70 IW to deliver tailored, timely, and full spectrum information operations to national decision-makers, theater commanders and warfighters of all services will continue to be severely degraded. The Wing's ability to conduct

foreign intelligence and information assurance operations as a major element of the Air Force Global Intelligence Mission will continue to be negatively impacted.

The Proposed Action and Action Alternative would meet this need; neither would result in significant adverse impacts on the quality of the natural or human environment. The Action Alternative would require clearing of several small existing buildings (one outdoor restroom and a small storage building); this would likely increase overall project costs slightly. The site considered under the Proposed Action is an existing parking lot, requiring minimal pre-construction preparation. Construction on this site has little potential to disturb natural resources nearby. The construction of the new 70th Intelligence Wing facility on this land would reduce the potential for new impacts to natural resources. Building the new 70th Intelligence Wing facility on the site considered under the Proposed Action is the preferred alternative.

Table ES-1 provides a concise comparison of effects on resources that would result from the Proposed Action, No-Action Alternative, and the Action Alternative.

Table ES-1. Comparison of effects of the Proposed Action, No-Action Alternative, and the Action Alternative for a new 70th Intelligence Wing facility at the NSA Exclusive Area at Fort Meade, MD.

Resource	Proposed Action	No-Action Alternative	Action Alternative
Land Use	Under the Proposed Action, the new 70th Intelligence Wing facility would be sited on an existing parking lot in an already developed area. Construction of the 70th Intelligence Wing would be consistent with post-wide and regional development strategies included in the post's land use plan. No adverse impacts to land use are anticipated.	Conditions on post would remain unchanged. Modest development would continue in the surrounding communities. No effect.	Under the action alternative, the proposed 70th Intelligence Wing would be constructed on an existing playing field. Construction of the 70th Intelligence Wing would be consistent with post-wide and regional development strategies, included within the post's land use plan. No adverse impacts to land use would be expected.
Air Quality	Construction-related emissions would be short term and temporary. Operations-related emissions from the 70th Intelligence Wing would make minimal (less than 1 percent) contribution to the total annual air emissions at Fort Meade. NO _x emissions from the boiler are estimated to be 0.28 tpy, and CO would be 0.14 tpy. All other pollutant emissions are negligible (i.e., 0.01 tpy or less). An MDE air quality permit may be required. Because of current access restrictions on post, no definitive air quality analysis of emissions from construction and commuter vehicles can be conducted, but it is assumed that Fort Meade will continue to promote carpooling and shuttle services to minimize commuter vehicle emissions.	Conditions on post would remain unchanged. No effect.	Construction-related emissions would be short term and temporary. Operations-related emissions from the 70th Intelligence Wing would make minimal (less than 1 percent) contribution to the total annual air emissions at Fort Meade. NO _x emissions from the boiler are estimated to be 0.28 tpy, and CO would be 0.14 tpy. All other pollutant emissions are negligible (i.e., 0.01 tpy or less). An MDE air quality permit may be required. Because of current access restrictions on post, no definitive air quality analysis of emissions from construction and commuter vehicles can be conducted but it is assumed that Fort Meade will continue to promote carpooling and shuttle services to minimize commuter vehicle emissions.
Water Resources	Surface waters are not likely to be affected under the Proposed Action. Given the planned use of storm water management features, both during and after construction, no significant impacts on surface waters from runoff are anticipated. Fort Meade groundwater resources are sufficient to meet potable water supply needs. Project construction plans include shallow subsurface excavations. No significant, adverse impacts to groundwater are anticipated.	Conditions on post would remain unchanged. Modest development in the surrounding communities suggests a watershed approach to stormwater planning. No effect.	Surface waters are not likely to be affected under the action alternative. Given the planned use of storm water management features, both during and after construction, no significant of surface waters from runoff are anticipated. Fort Meade groundwater resources are sufficient to meet potable water supply needs. Project construction plans include shallow subsurface excavations. No significant, adverse impacts to groundwater are anticipated.
Aquatic Resources and Wetlands	There are no mapped wetlands areas on or around the construction site considered under the Proposed Action. No impacts are anticipated.	Conditions on post would remain unchanged. No effect.	There are no mapped wetlands areas on or around the construction site considered under the action alternative. No impacts are anticipated.

Table ES-1. Comparison of effects of the Proposed Action, No-Action Alternative, and the Action Alternative for a new 70th Intelligence Wing facility at the NSA Exclusive Area at Fort Meade, MD.

Resource	Proposed Action	No-Action Alternative	Action Alternative
Vegetation	Construction on this currently developed site would remove primarily existing herbaceous and grassed vegetation. Landscape plantings would provide positive visual values.	Conditions on post would remain unchanged. No effect.	Under the action alternative, construction on the site would require the removal of some existing herbaceous and grassy vegetation and scattered small trees. New vegetation would be planted around the new building once construction is complete. No significant impacts are expected.
Wildlife Resources	Under the Proposed Action, the project would be built on an existing parking lot with poor wildlife habitat. It is anticipated that the small mammals and birds present would attempt to relocate to similar habitats on post. Landscape plantings using native plants around proposed new structures may improve habitat value. Construction of the 70th Intelligence Wing follows Fort Meade’s Master Plan and Fort Meade’s INRMP has addressed, in detail, overall wildlife habitat preservation on post. No impacts are anticipated.	Conditions on post would remain unchanged. No effect.	Under the action alternative, the new 70th Intelligence Wing facility would be constructed on a previously disturbed playing field. Any wildlife found here would attempt to relocate to similar habitat elsewhere on the installation. Construction of the 70th Intelligence Wing follows Fort Meade’s Master Plan and Fort Meade’s INRMP has addressed, in detail, overall wildlife habitat preservation on post. No impacts are anticipated.
Threatened & Endangered Species	There are no federally listed threatened or endangered species known to exist on Fort Meade. The project area drains indirectly into the Little Patuxent River (home to the rare glassy darter); nevertheless, project plans would minimize surface runoff and direct discharges into appropriate drainage structures. No impacts are anticipated.	Conditions on post would remain unchanged. No effect.	There are no federally listed threatened or endangered species known to exist on Fort Meade. The project drains indirectly into the Little Patuxent River (home to the rare glassy darter); nevertheless, project plans would minimize surface runoff and direct discharges into appropriate drainage structures. No impacts are anticipated.
Prime and Unique Farmlands	The site does not have soils that are categorized as prime farmland. No impacts are anticipated.	Conditions on post would remain unchanged. No effect.	Soils of the area considered under the action alternative are not categorized as prime farmland. No impacts are anticipated.
Wild and Scenic Rivers	The Patuxent River and Severn River are classified as Maryland “Scenic and Wild” rivers. Best management practices, such as planting riparian buffers along tributary stream channels and implementing stormwater controls at Fort Meade, minimize potential effects to these river systems. No rivers in Maryland are classified under the Federal Wild and Scenic Rivers Act. No adverse impacts are anticipated.	Conditions on post would remain unchanged. No effect.	The Patuxent River and Severn River are classified as Maryland “Scenic and Wild” rivers. Best management practices, such as planting riparian buffers along tributary stream channels and implementing stormwater controls at Fort Meade, would minimize potential effects to these river systems. No rivers in Maryland are classified under the Federal Wild and Scenic Rivers Act. No adverse impacts are anticipated.
Cultural Resources	There are no known cultural resources on Proposed Action site. No adverse impacts are anticipated.	Fort Meade currently implements an approved Cultural Resource Management Plan. No effect.	There are no known cultural resources on the action alternative site. No adverse impacts are anticipated.

Table ES-1. Comparison of effects of the Proposed Action, No-Action Alternative, and the Action Alternative for a new 70th Intelligence Wing facility at the NSA Exclusive Area at Fort Meade, MD.

Resource	Proposed Action	No-Action Alternative	Action Alternative
Hazardous, Toxic, and Radioactive Substances	<p>Any HAZMAT or waste encountered during construction would be handled according to appropriate safety procedures. No adverse impacts are anticipated.</p> <p>Fort Meade has recently been designated as a Superfund site. CERCLA investigations are currently underway. No known contaminated sites are located in the proposed project area.</p>	Maintenance, materials handling, and waste disposal would not change on Fort Meade. No effect.	<p>Any HAZMAT or waste encountered during construction, or demolition, would be handled according to appropriate safety procedures. No adverse impacts are anticipated.</p> <p>Fort Meade has recently been designated as a Superfund site. CERCLA investigations are currently underway. No known contaminated sites are located in the proposed project area.</p>
Infrastructure	<p>Water, wastewater capacity, and natural gas are sufficient to support the new facility. New electrical lines would be extended to the site. No significant impacts to service from water, wastewater, or energy systems are anticipated.</p> <p>Demands on solid waste facilities would increase minimally, but within capacity.</p>	The demand for infrastructure and its capacity would remain the same. No effect.	<p>Water, wastewater capacity, electricity, and natural gas are sufficient to support the new facility. No significant impacts to service from water, wastewater, or energy systems are anticipated.</p> <p>Demands on solid waste facilities would increase minimally, but within capacity.</p>
Traffic	The project will bring approximately 40 personnel now working off-base to the facility. Because of anti-terrorist measures and restricted access to the post, no definitive traffic analysis of new commuting 70th Intelligence Wing staff can now be conducted. It is assumed that Fort Meade will continue to promote car-pooling and shuttle services to minimize current and future traffic congestion.	Traffic levels would not increase on Fort Meade. Restricted access and resulting traffic backups at post entrance gates are likely to continue. Modest development in the surrounding communities would likely increase traffic congestion, but regional transportation plans have been developed to address this growth.	The project will bring approximately 40 personnel now working off-base to the facility. Because of anti-terrorist measures and restricted access to the post, no definitive traffic analysis of new commuting 70th Intelligence Wing staff can now be conducted. It is assumed that Fort Meade will continue to promote car-pooling and shuttle services to minimize current and future traffic congestion.
Socioeconomic Conditions	<p>Socioeconomic effects of construction, if any, would be minimal and temporary.</p> <p>70th Intelligence Wing operation on Fort Meade would not change overall living conditions in the ROI. No impacts to social conditions are anticipated. No significant effect on area economy is expected.</p>	Conditions on post would remain unchanged. No effect.	<p>Socioeconomic effects of construction, if any, would be minimal and temporary.</p> <p>70th Intelligence Wing operation on Fort Meade would not change overall living conditions in the ROI. No impacts to social conditions are anticipated. No significant effect on area economy is expected.</p>
Noise	Construction noise would be of relatively short duration and limited to the project area. Temporary noise barriers would be constructed if necessary. No adverse impacts to sensitive noise receptors are anticipated.	Modest development in the surrounding communities would likely result in some increase in noise levels. No effect.	Construction noise would be of relatively short duration and limited to the project area. Temporary noise barriers would be constructed if necessary. No adverse impacts to sensitive noise receptors are anticipated.
Environmental Justice	No disproportionately high adverse effects on minority or low-income communities or on children are anticipated.	Conditions on post would remain unchanged. No effect.	No disproportionately high adverse effects on minority or low-income communities or on children are anticipated.

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ACRONYMS AND ABBREVIATIONS

AAFES	Army and Air Force Exchange Service
ACM	asbestos-containing material
ARPA	Archeological Resource Protection Act
ARRP	Army Radon Reduction Program
ASL	Active Sanitary Landfill
AST	above ground storage tanks
AWTP	advanced wastewater treatment plant
BGE	Baltimore Gas and Electric
BRAC	Base Realignment and Closure
BRAC 1	Defense Authorization Amendments and Base Closure Act of 1988 (Public Law 100-526)
BRAC 95	Base Realignment and Closure Act of 1990 (Public Law 101-510)
BWI	Baltimore-Washington International
CAA	Clean Air Act
CDC	Child Development Center
CDS	Child Development Services
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CLD	Clean Landfill Dump
CLV	Critical Lane Volume
CO	carbon monoxide
COMAR	Code of Maryland Regulations
CRMP	Cultural Resource Management Plan
CWA	Clean Water Act
DA	Department of the Army
dB	decibels
dBA	A-weighted decibel
DINFOS	Defense Information School
DNL	Day-Night Level
DoD	Department of Defense
DNR	Department of Natural Resources

DPW	Directorate of Public Works
DRM	Directorate of Resource Management
DRMO	Directorate of Resource Management Operations
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EMO	Environmental Management Office
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESSD	Executive Software Systems Directorate
FCA	Forest Conservation Act
FFCA	Federal Facility Compliance Act
FIDS	forest interior dwelling species
FY	Fiscal Year
GMA	growth management area
gpcd	gallons per capita per day
gpd	gallons per day
gpm	gallons per minute
HAZMAT	hazardous material
HCM	Highway Capacity Manual
HUD	Housing and Urban Development
INRMP	Integrated Natural Resource Management Plan
IPMP	Installation Pest Management Plan
ISCP	Installation Spill Contingency Plan
ISWM	Integrated Solid Waste Management Plan
K	thousand
kV	kilovolt
kVA	kilovolt average
LBP	lead based paint
L _{eq}	equivalent sound levels
LOS	Level of Service (traffic)
M	million
MARC	Maryland Rail Commuter Service
MD	Maryland

MDE	Maryland Department of the Environmental
mgd	million gallons per day
mg/l	milligrams per liter
MMBtu/hr	million British thermal units per hour
MMBtu/yr	million British thermal units per year
MSDS	material safety data sheets
msl	mean sea level
MTA	Mass Transit Administration
NAHB	National Association of Home Builders
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO ₂	nitrogen dioxide
NOI	notice of intent
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NSA	National Security Agency
O ₃	ozone
OSHA	Occupational Safety and Health
PAO	Public Affairs Office
Pb	Lead
PCB	polychlorinated biphenyl
pCi/L	picocuries per liter
PM-10	particulate matter- with diameter of 10 microns or less
PMSA	primary metropolitan statistical area
PPA	Pollution Prevention Act
ppm	parts per million
psi	pounds per square inch
psig	pounds per square inch/gas
PTC	permit to construct
RCRA	Resource Conservation Recovery Act
ROI	region of influence
SAV	Submerged Aquatic Vegetation

SF	square feet
SHPO	State Historic Preservation Office
SO ₂	sulfur dioxide
SPCC	Spill Prevention Control Countermeasures
SWDA	Solid Waste Disposal Act
SWMP	stormwater management program
SWM	stormwater management
TAA	Tipton Army Airfield
tpd	tons per day
tpy	tons per year
USACE	U.S. Army Corps of Engineers
USATHAMA	U.S. Army Toxic and Hazardous Materials Agency
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tanks
VOC	volatile organic compound
WTP	water treatment plant
WWI	World War I
WWII	World War II

1.0 PURPOSE OF AND NEED FOR THE ACTION

1.1 NEED FOR THE ACTION

Fort George G. Meade is a permanent United States Army Installation with the mission of providing leadership in base operations supporting tenant activities that includes all services, Department of Defense (DoD) activities, and federal agencies. The major command for Fort Meade is the Military District of Washington (MDW). The construction of a new 70th Intelligence Wing facility supports this mission.

The proposed project was submitted at the request of the 694th Intelligence Wing (70 IW), an Air Force Tenant unit assigned to Fort Meade. The proposed facility would provide administrative space for Command components of the 70th Intelligence Wing and the 694th Intelligence Group (694 IG), Air Force Special Intelligence Detachment and customer support functions. The House Command and support functions of the 70 IW and 694 IG are currently located in five separate sub-standard facilities. The 70 IW and 694 IG require the ability to communicate at all levels of security in a timely manner with national decision-makers, Theater Commanders, and Warfighters of all services. The 70 IW provides command and control to over 3,800 personnel assigned to Fort Meade, MD; Misawa AB, Japan; and Lackland AFB, TX. The 694 IG and subordinate organizations provide administrative support to over 2,700 military personnel assigned to the National Security Agency, located at Fort Meade. The proposed facility would also provide space to the Air Force Office of Special Investigations, investigative and polygraph functions.

Currently, the 70 IW operations occupy 4,810 square meters (SM) in four separate facilities in the 9800 Area of Fort Meade and one National Security Agency Facility located 9 miles away from the rest of the 70 IW in the Fort Meade 9800 Area. Of the 4,810 SM currently occupied, 1,208 SM are adequate. This includes appropriate security level, functionality and location. Of the space currently occupied, 925 SM is in converted dormitory rooms, resulting in 40 airmen being required to reside off post each year; of this 474 SM are substandard basement storage area converted to office space with ceiling heights as low as 6.5 feet. Five Wing and Group staff agencies, as well as Wing and Group operations functions are located 9 miles away in leased

facilities. There is no resident Sensitive Compartmentalized Information Facility (SCIF) space available to the Wing leadership and staff, thereby denying access to critical, time sensitive, classified information required to control world-wide intelligence resources under the 70 IW command. The 70 IW is in violation of Air Force regulations 32-1024 and Air Force Handbook 32-1084 owing to the lack of adequate space.

Without the proposed project, the 70 IW and 694 IG would continue to operate in geographically separated locations, resulting in decreased effectiveness of a unit responding to National Intelligence tasks. Command and control of the largest intelligence wing in the Air Force would continue to be hindered by the time delay in internal communications. Additionally, 40 airmen will continue to be denied access to Unaccompanied Enlisted Personnel housing and an additional 20 airmen will be required to live off post in order to meet current facility space requirements. The ability of the 70 IW to deliver tailored, timely, and full spectrum information operations to national decision-makers, theater commanders and warfighters of all services will continue to be severely degraded. The Wing's ability to conduct foreign intelligence and information assurance operations as a major element of the Air Force Global Intelligence Mission will continue to be negatively impacted.

1.2 PURPOSE OF THE ACTION

The purpose of constructing a new 70th Intelligence Wing facility is to support the mission of the 70 IW and 694 IG to communicate at all levels of security in a timely manner with national decision-makers, Theater Commanders, and Warfighters of all the services. The proposed project would facilitate more effective communication between all essential parties by bringing together the now geographically-separated members of the 70th Intelligence Wing in one building with updated, state-of-the-art facilities.

Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, and its implementing regulations, the Army has prepared this environmental assessment (EA) to address the potential environmental impacts of this action. The study area for this EA encompasses both Fort Meade and the surrounding communities defined as the region of influence (ROI). For this EA, the ROI consists of Anne Arundel and Howard Counties in Maryland.

1.3 LOCATION

Fort Meade encompasses approximately 5,415 acres in Anne Arundel County, Maryland. The facility is located southeast of the Baltimore-Washington Parkway and west of Interstate 97. Figure 1-1 shows the location of Fort Meade within a regional context.

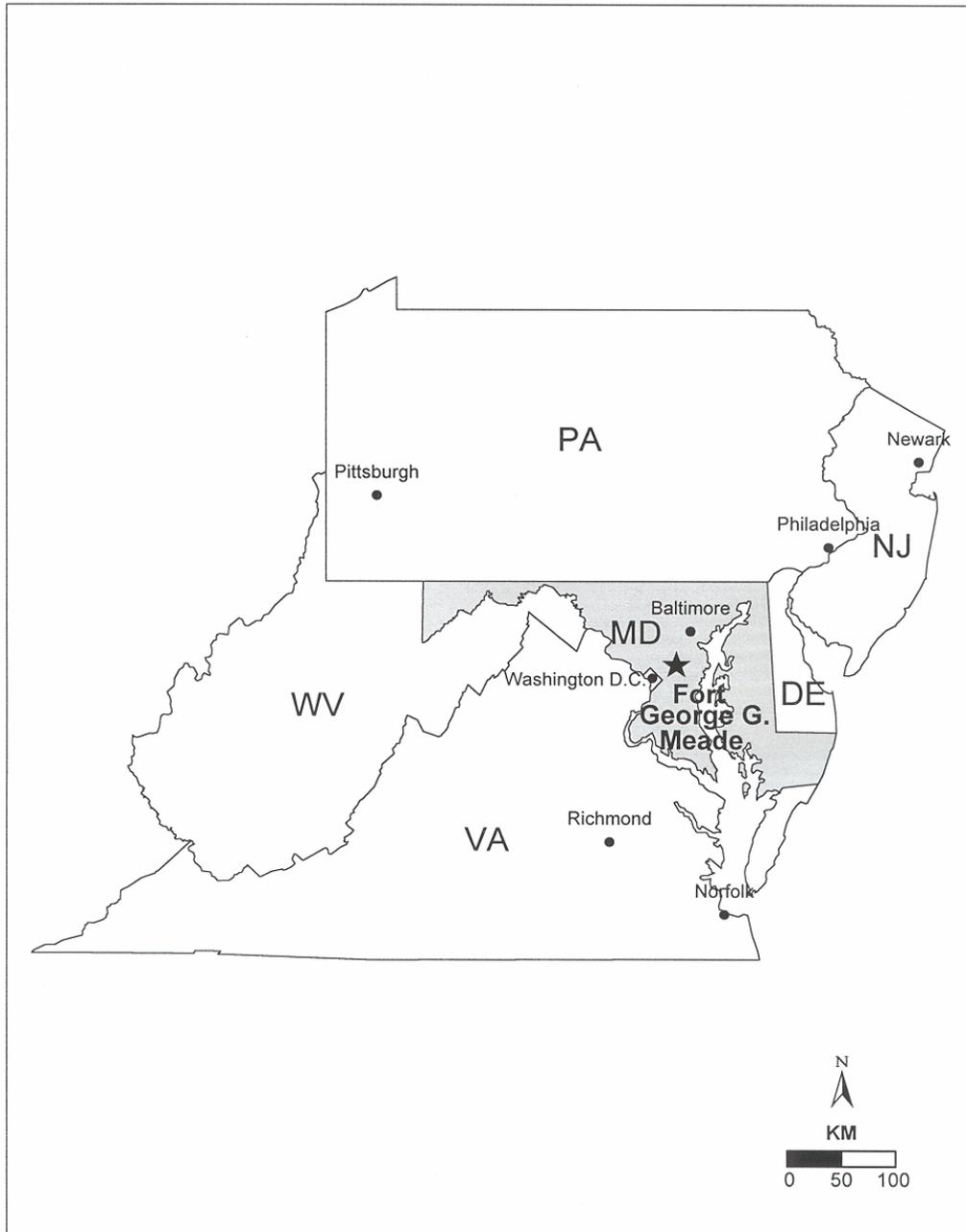


Figure 1-1. Map showing Fort Meade within a regional context

1.4 INSTALLATION HISTORY

Fort Meade, originally named Camp Meade for Major General George Gordon Meade, was authorized by Congress in 1917 as a training cantonment during World War I (WWI). During WWI, more than 100,000 troops passed through Camp Meade. A second cantonment area was added to the site in 1918. In 1928, Camp Meade was made a permanent installation and given the name Fort Leonard Wood, which was changed a year later, after much protest from Pennsylvania residents, to Fort George G. Meade. About 2,200 troops were assigned to Fort Meade during the 1930s (Goodwin et al. 1994).

By 1940, the installation had 251 permanent brick buildings and 218 temporary wooden buildings. In the same year, however, Fort Meade began an extensive build out of facilities in response to the New Selective Service and Training Act of 1940. Originally 9,349 acres in size, the installation was expanded to 13,691 acres to accommodate the additional training activities. As a result of the build-out, Fort Meade became the fourth largest community in Maryland. Fort Meade continued its training mission until 1992 when, under BRAC I, the 8,100-acre range and training area south of MD Route 32 was transferred to the U.S. Fish and Wildlife Service. Reduced to approximately 5,415 acres, the remaining installation acreage is being developed for military and tenant uses. Currently, there are approximately 76 tenant organizations at Fort Meade, including the Defense Information School (DINFOS), 694th Intelligence Wing, and the National Security Agency (NSA), Fort Meade's largest tenant (USACE 1997).

1.5 MISSION

Fort Meade is dedicated to providing quality support to many federal agencies (including the DoD), soldiers and their families, and civilian employees. Fort Meade's mission is to provide leadership in post operations and to assume the responsibility for numerous activities conducted to support the approximately 114 tenant organizations from all four services and many federal agencies. Following Base Realignment and Closure (BRAC) actions, Fort Meade currently has an increased mission as a major federal administrative center and has the need to accommodate additional tenants and activities. Fort Meade also provides for the quality of life for service members and their families, the civilian work force, and retirees that make up the Fort Meade community.

1.6 SCOPE OF THE EA

The NEPA was enacted to ensure that federal agencies consider the environmental effects of their actions. The intent of the NEPA is to protect, restore, or enhance the environment through well-informed federal decisions. Under the NEPA, federal agencies are required to systematically assess the environmental consequences of their Proposed Actions during the decision-making process. The purpose of the Council on Environmental Quality (CEQ) is to develop implementation regulations and to oversee the efforts of federal agencies as they implement the NEPA programs. NEPA implementation regulations were issued in 1978, and are included in Title 40, Code of Federal Regulations (CFR), Parts 1500-1508.

This EA identifies, describes, and evaluates the potential environmental impacts that would result from the implementation of the Proposed Action and its alternatives, taking into consideration possible cumulative impacts from other actions. As appropriate, the affected environment and environmental consequences of the action will be described in both regional and site-specific contexts. In instances where mitigation measures may not be required, this EA identifies operating procedures that would be implemented to further minimize environmental impacts. This EA is based on the most current information available as of March 2005.

The following biophysical resources have been identified for study at Fort Meade: water resources, earth resources, aquatic resources and wetlands, vegetation, wildlife resources, infrastructure and utilities, hazardous materials and waste (relative to Fort Meade's Superfund status), biological resources, cultural resources, socioeconomic resources, and land use. Potential impacts of stormwater runoff into waterways, as a result of the Proposed Action and its alternatives, are also evaluated. Safety and health impacts are evaluated, but it has been assumed that contractors would be responsible for compliance with the applicable Occupational Safety and Health Act (OSHA) regulations that concern occupational hazards and specifying appropriate protective measures for all employees. Additionally, maintenance activities subject to OSHA regulations are not components of the Proposed Action.

Because of terrorist activities conducted against the United States on September 11, 2001, Fort Meade and all other federal installations and agencies have been closed to unrestricted public access. During this time, access to and travel on Fort Meade has been restricted through the

implementation of gate inspections and random vehicle searches. The duration of these restrictions are permanent (Gebhardt 2001a). Because of the traffic changes that have resulted from this situation, this EA cannot definitively address projected traffic conditions and air emissions (related to traffic). To the extent possible, however, potential impacts to these resource areas are discussed.

Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, February 11, 1994, instructs each federal agency to make “achieving environmental justice part of its mission, by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” No disproportionately high and adverse impacts upon minority populations and low-income populations are expected from the Proposed Action or alternatives.

This EA identifies, documents, and evaluates the potential environmental impacts of the Proposed Action and one action alternative. The current activities included in the No-Action Alternative constitute the baseline for the analysis of effects. Fiscal Year 2005 (FY05) activities are used to establish the baseline conditions. However, where FY05 data were not available, the most current available information was used. The implementation of the No-Action Alternative would not result in any change to this baseline. The existing conditions at Fort Meade are described in Chapter 3 – Affected Environment. A team of environmental scientists, ecologists, and engineers have analyzed the potential effects associated with each alternative and have presented the results in Chapter 4 – Environmental Consequences.

1.7 APPLICABLE REGULATORY REQUIREMENTS

This EA complies with the NEPA, CEQ regulations, and DoD Instruction 4715.9. The EA also addresses all applicable laws and regulations, including but not limited to the following:

- National Historic Preservation Act (NHPA),
- Archeological Resources Protection Act (ARPA),
- Clean Air Act (CAA),
- AFI 32-7040, Air Quality Compliance,

- Clean Water Act (CWA),
- Endangered Species Act (ESA),
- Pollution Prevention Act (PPA), and
- Resource Conservation and Recovery Act (RCRA).

1.8 ORGANIZATION OF THE ENVIRONMENTAL ASSESSMENT

This EA is organized into eight chapters and four appendices. Chapter 1 contains an introduction, the purpose and need for the action, the location of the Proposed Action, and the scope and organization of the document. Chapter 2 presents the alternatives, describing the Proposed Action, No-Action Alternative, two Action Alternatives, and alternatives eliminated from consideration. Chapter 3 describes the affected environment. Chapter 4 analyzes the environmental consequences of the Proposed Action, No-Action Alternative, and the Action Alternative. Chapter 5 presents conclusions and recommendations that are derived from a review of the analysis of environmental consequences and presents a tabular summary of impacts by resource. Chapter 6 lists the persons and the agencies that were consulted. Chapter 7 provides a list of the preparers. Chapter 8 lists the source documents and the references that were relevant to the preparation of this EA.

Appendices to this document cover relevant EA documentation and information. Appendix A presents interagency and intergovernmental coordination efforts and correspondences. A sample cover letter is included that was sent to previous agency correspondents who had recently replied to NEPA-related requests concerning activities at Fort Meade. Appendices B, C, and D contain lists of the plants, birds, and mammals, respectively, that exist at Fort Meade.

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2.0 ALTERNATIVES CONSIDERED

This chapter is composed of seven sections: a detailed description of the Proposed Action, a description of the No-Action Alternative, a description of the action alternative, other alternatives eliminated from detailed study, mitigation measures (if applicable), other planned activities that might contribute to cumulative effects, and the focus of the analysis.

2.1 PROPOSED ACTION

Fort Meade has requested the preparation of this EA to address the construction of a new 72,000 square foot facility for the 70th Intelligence Wing (70 IW). Currently, the 70 IW operations occupy 4,810 square meters (SM) in four separate facilities in the 9800 Area of Fort Meade and one National Security Agency Facility located 9 miles away from the rest of the 70 IW in the Fort Meade 9800 Area. Of the space currently occupied, 925 SM is in converted dormitory rooms, resulting in 40 airmen being required to reside off post each year; of this 474 SM are substandard basement storage area converted to office space with ceiling heights as low as 6.5 feet. Five Wing and Group staff agencies, as well as Wing and Group operations functions are located 9 miles away in leased facilities. There is no resident Sensitive Compartmentalized Information Facility (SCIF) space available to the Wing leadership and staff, thereby denying access to critical, time sensitive, classified information required to control world-wide intelligence resources under the 70 IW command. The Proposed Action would construct a new 70th Intelligence Wing facility between Love Road and 3rd Cavalry Road at NSA. An open paved parking lot with 269 spaces for the facility would be constructed on an existing playing field immediately north of Newjon Road, near 3rd Calvary Road. Figure 2-1 shows the proposed location of the new 70th Intelligence Wing facility and its associated parking lot.

The site of the Proposed Action has been considered relative to force protection and security. The site has been selected because it ensures protection of assigned personnel in a secure facility that has been designed with safeguards against terrorism. The location of the 70th Intelligence Wing under the Proposed Action would be in close proximity to other services and related facilities. This site has the advantage of having the facility in an optimal location with respect to

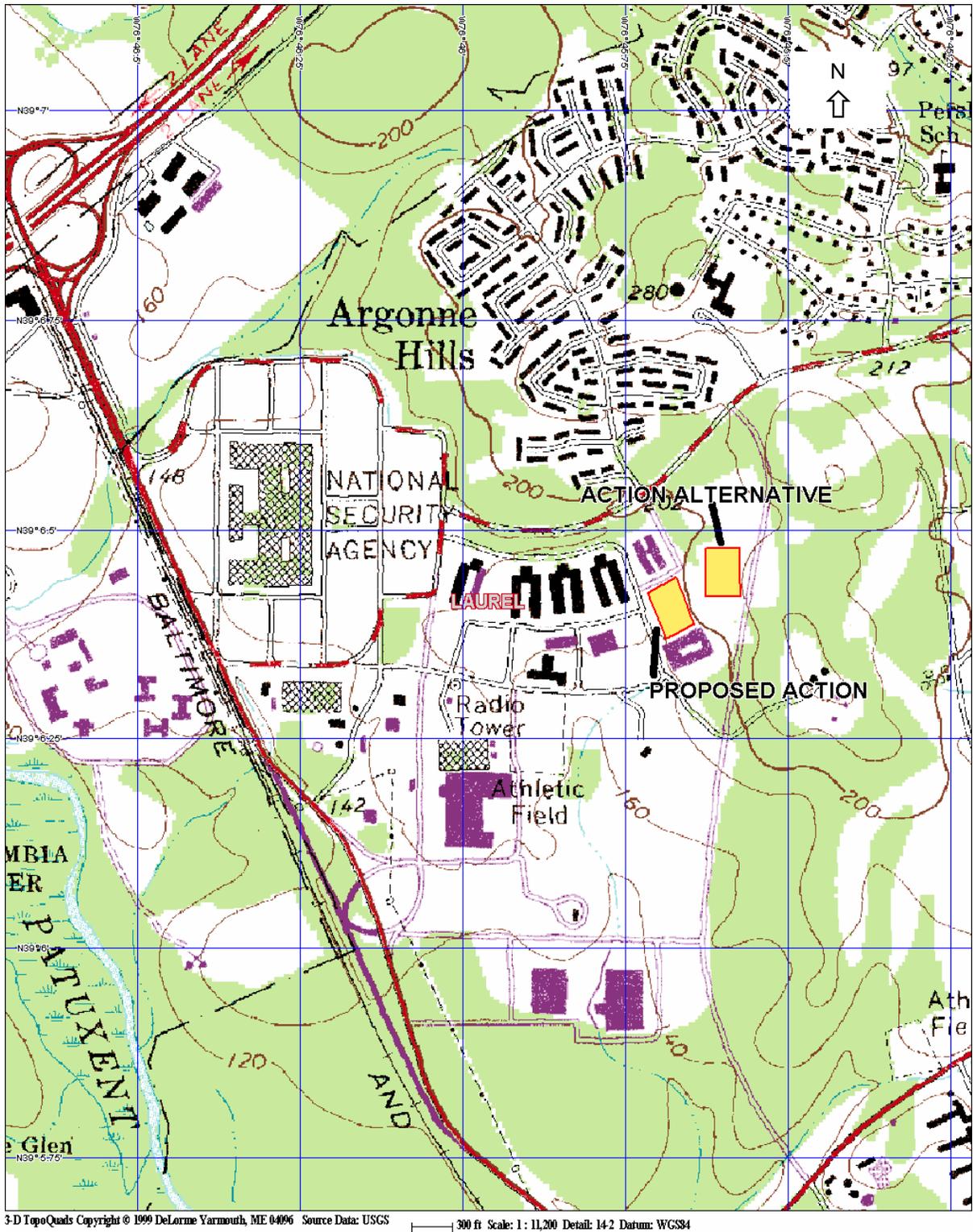


Figure 2-1. Approximate locations of the Proposed Action and Action Alternative sites (in yellow) for the proposed new 70th Intelligence Wing facilities at the National Security Agency, within Fort Meade, Anne Arundel County, Maryland.

related on-post facilities. Further, new construction on this open existing parking area would be environmentally and economically viable.

2.2 NO-ACTION ALTERNATIVE

Analysis of the No-Action Alternative is prescribed by CEQ regulations and serves as the benchmark against which the environmental and socioeconomic effects of the Proposed Action and other reasonable alternatives can be evaluated. In this EA, the benchmark is the baseline of existing conditions at Fort Meade and adjacent areas as of 2005. However, where FY05 data were not available, the most current available information was used. These conditions are described in detail in Chapter 3 of the document.

If the No-Action Alternative were selected, the 70 IW and 694 IG would continue to operate in geographically separated locations, resulting in decreased effectiveness of a unit responding to National Intelligence tasks. Command and control of the largest intelligence wing in the Air Force would continue to be hindered by the time delay in internal communications.

Additionally, 40 airmen will continue to be denied access to Unaccompanied Enlisted Personnel housing and an additional 20 airmen will be required to live off post in order to meet current facility space requirements.

2.3 ACTION ALTERNATIVE

Under the action alternative, a new 70th Intelligence Wing facility of the same size and characteristics described for the Proposed Action would be constructed, but at a different site. The action alternative site is located immediately north of Newjon Road, near 3rd Cavalry Road at the site of an existing playing field (Fig. 2-1). The existing paved parking area on the site of the Proposed Action (immediately west of 3rd Calvary Road) would be used for parking for the new facility. Two small buildings, including one outdoor restroom and a storage shed, would have to be removed prior to construction of the Action Alternative. The construction of building and paved areas would be situated on the parcel in a manner that would comply with all regulatory requirements and address issues pertaining to existing natural resources. The proposed site under this alternative has been considered relative to force protection and security.

2.4 MITIGATION MEASURES

The Proposed Action would comply with all applicable regulations. Construction permits would be obtained for soil and erosion control, floodplain effects, and storm water discharge during construction. Wetland and cultural resources would be avoided.

2.5 OTHER PLANNED ACTIVITIES

2.5.1 On-Post

Construction of the new 70th Intelligence Wing facility would occur during 2005-2006.

Construction efforts at Fort Meade through the construction year 2006 are listed below in Table 2-1 (Galiber 2005).

Table 2-1. Construction Efforts at Fort Meade Through the Construction Year 2006

Project	Size	Cost	Construction Year	Facility Classification	Personnel/occupants	Location
Family Travel Camp	36 Acres	\$3.1M	2001- 2002	Transient	4 full-time personnel	Between Ernie Pyle and Wilson south of 4th Street
Pet Boarding Facility	2,900 SF	\$0.5M	2002- 2002	Transient	4 full-time personnel	South side of Rte 32, west of Pepper Street overpass cleared area east of Building T-4.
Child Development Center	24,047 SF	\$5.8M	2002- 2003	Transient	27 full-time personnel/ 303 children	West side of Ernie Pyle just north of SWMP vic Building P-909 on north side of Reece Road
55 th Signal Company Operations	31,821 SF	\$5.4M	2002- 2003	Relocation 200 feet east of current WWII wood site	79 People	East of Building 909 on Chisholm, north of 13th Street
Barracks Complex, DH	27,550 SF	\$9.6M	2004-2006	Relocation from 2 buildings across the street	20 F-T Personnel 800 Customers	North East corner of 6 th Armored Calvary Road and Simonds Street
AR Center/OMS	104,716 SF	\$21.4M	2005-2007	Relocation 1/2 mile North West from Current WWII Site and 2.5 Miles North West from Current Korean War Site	10 F-T Personnel 1500 Customers	South East corner of I Street and 21 & 1/2 Street
AR Center Phase II	109,430 SF	\$14.6M	2005-2007	Relocation 1/2 mile North West from Current WWII Site and 2.5 Miles North West from Current Korean War Site	10 F-T Personnel 1500 Customers	North East corner of Maryland Route 175 and 20 & 1/2 Street

Table 2-1. Continued

Project	Size	Cost	Construction Year	Facility Classification	Personnel/occupants	Location
Rosie's Ball Field	7 Acres	\$0.6M	2004-2005	Relocation 1 & ¼ Miles North East from new Barracks construction site	0 Personnel 18 Customers	North West Corner of Y Street and Llewellyn Avenue
Teen Center	5,152 SF	\$1.3M	2005-2006	Relocation ¼ Mile North from Current WWII Site	1 F-T Personnel 20 Customers	South East corner of Mac Aurthur Road and Clark Road

2.5.2 Regional

Both Anne Arundel and Howard Counties have devised growth and development strategies with their respective general plans. The 1997 General Development Plan for Anne Arundel County has major goals to manage growth, conserve the environment and meet residents' needs. County officials are encouraged to use zoning laws to promote construction with three major Town Centers, the Parole Growth Management Area, the Odenton Growth Management Area, and the Glen Burnie Urban Renewal Area (Anne Arundel County 1997). Odenton, a neighboring town to Fort Meade, has also outlined detailed development goals in its 1997 Town Plan (Anne Arundel County 1995). Many Anne Arundel County residential and commercial construction efforts in the Fort Meade area have been on-going or have been completed within the last several years. Notable projects are listed in the following sections.

2.5.2.1 Residential

- Seven Oaks
- Piney Orchard
- Russett
- Chapel Grove
- Dorchester Housing Development
- Senior Citizen Housing Development
- Village at Waugh Chapel (planned unit development by County Planning Area)

2.5.2.2 Commercial and Industrial

- **Odenton Small Planning Area**
Mayfield Industrial Park

- Mayfield Industrial Park Section 2
- Arundel Crossing East/West
- Arundel Crossing East
- Academy Crossing
- Piney Orchard
- Nevarmar Corporation
- Exxon Corporation
- Nellis Corporation
- Amerada Hess Corporation
- Ascherl Property
- Williams Property/Storage U.S.A.
- Odenton Self Storage
- **Jessup/Maryland City Small Planning Area**
 - The National Business Park
 - Corridor Marketplace
- **Severn Small Planning Area (Commercial/Industrial Activity)**
 - Dorchester
 - Quarterfield Business Park
 - Metro at Quarterfield
 - Arundel Mills

More detailed information concerning Anne Arundel County development is provided in section 3.1.3.

The Howard County General Plan is updated every decade, and that, in conjunction with the strategies devised by the Department of Planning and Zoning has influenced development within the county since 1967. The 2000 General Plan (adopted November 2000) steers development over the next 10 years toward community conservation and enhancement, economic viability of older commercial and employment centers, agricultural land preservation, support for the farming industry, and environmental protection and restoration (Howard County 2000a). The county's growth management system has worked to phase in proposed projects at a reasonable pace and lessen impacts on public utilities and schools, especially in the northern areas of the county where the greatest development pressure exists. Planners have predicted that more than

5,300 new housing units would be phased in county-wide over several years (Howard County 2000). As of October 2001, Howard County's Department of Planning and zoning issued 150 residential and 53 non-residential construction permits. However, no residential or commercial projects were specifically identified to begin construction during 2002 (Howard County 2001a).

2.6 FOCUS OF THE ENVIRONMENTAL ANALYSIS

Preliminary analysis of the Proposed Action and its action alternative indicated that potential impacts would likely be greatest on the following resources: land use, water quality, and infrastructure. Potential impacts to other resources have been addressed to the extent needed to ensure that no significant impacts would occur.

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3.0 AFFECTED ENVIRONMENT

Fort Meade, originally named Camp Meade for Major General George Gordon Meade, was authorized by Congress in 1917 as a training cantonment during World War I (WWI). During WWI more than 100,000 troops passed through Camp Meade. A second cantonment area was added to the site in 1918. In 1928, Camp Meade was made a permanent installation and given the name Fort Leonard Wood, which was changed back a year later, after much protest from Pennsylvania residents, to Fort George G. Meade. About 2,200 troops were assigned to Fort Meade during the 1930s (Goodwin et al. 1994).

By 1940, the installation had 251 permanent brick buildings and 218 wooden temporary buildings. In the same year, however, Fort Meade began an extensive build-out of facilities in response to the New Selective Service and Training Act of 1940. Originally 9,349 acres in size, the installation was expanded to 13,691 acres to accommodate the additional training activities. As a result of the build out, Fort Meade became the fourth largest community in Maryland (Goodwin et al. 1994).

Fort Meade continued its training mission until 1988 when, under BRAC I, the 8,100-acre range and training area south of MD Route 32 was transferred to the Department of the Interior for the creation of the Patuxent National Research Refuge. Another 366 acres comprising Tipton Airfield was transferred to Anne Arundel County Government in 1999. Reduced to approximately 5,415 acres, the remaining installation acreage is being developed for military and tenant uses. Currently, there are approximately 76 tenant activities at Fort Meade, including the Defense Information School, 694th Intelligence Wing, Naval Security Group Activity, and the NSA, Fort Meade's largest tenant (Galiber 2002).

Geographic Setting and Location

Fort Meade is situated in Anne Arundel County, almost equidistant from Baltimore, Maryland, and Washington, D.C. The Anne Arundel County Seat is approximately 14 miles southeast of the installation in Annapolis, Maryland. The southeastern part of Howard County extends to within 2 miles of Fort Meade. Figure 3-1 depicts Fort Meade within this regional context. Fort

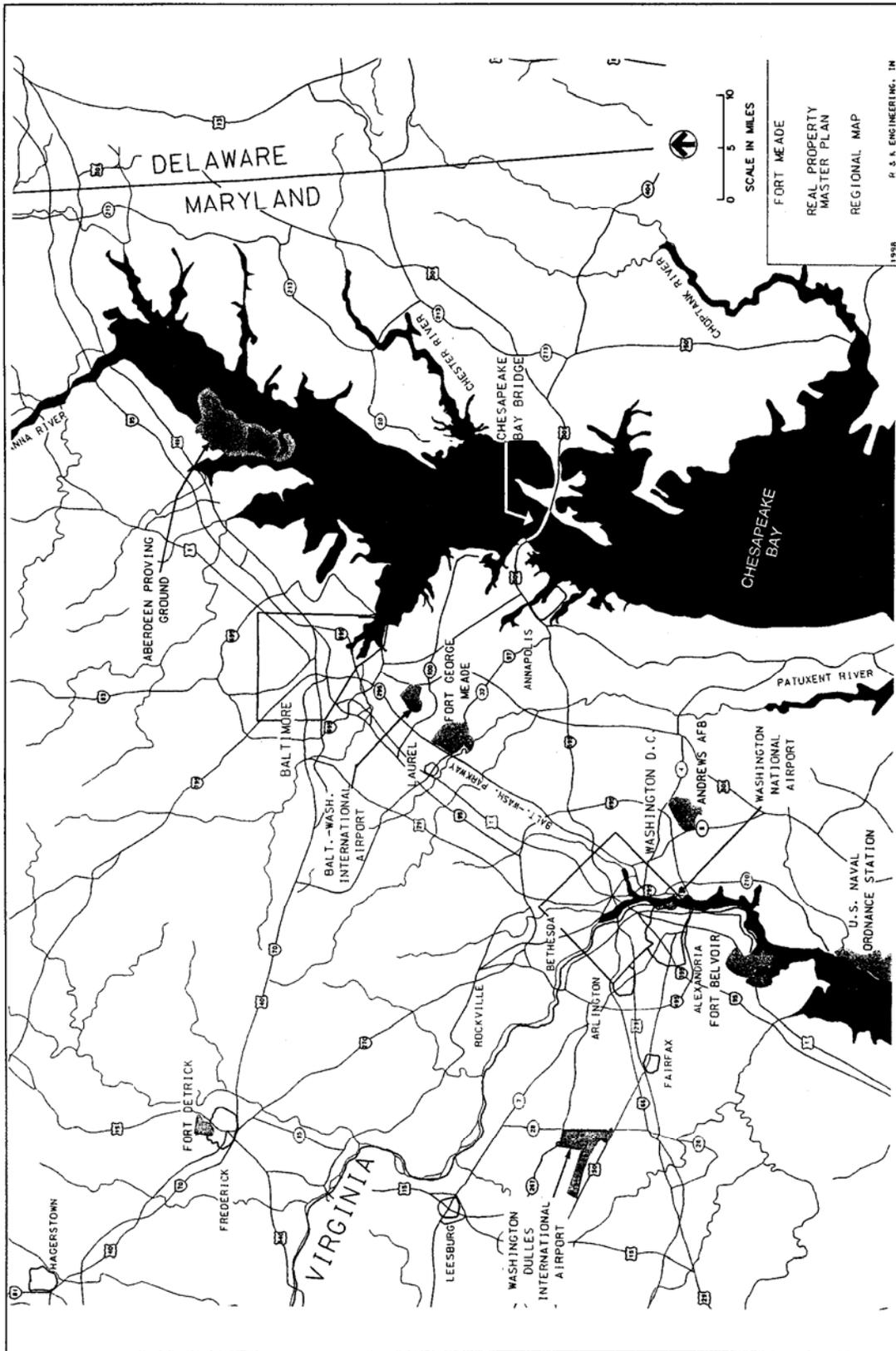


Figure 3-1. Map showing Fort Meade within a regional context

Meade is bounded by the Baltimore-Washington Parkway to the northwest, as well as the AMTRAK line, MD Route 175, and MD Route 32 to the south. The Little Patuxent River runs along a part of the southwest corner of the facility. Two of its tributaries, Midway Branch and Franklin Branch, flow south through the installation. Fort Meade is located in the Chesapeake Bay watershed.

Fort Meade is surrounded to the north, west, and east by residential areas of low-medium density (2 to 5 dwellings per acre), medium density (5 to 10 dwellings per acre), and high density (10 or more dwellings per acre); commercial centers; and a mix of industrial uses. Areas along transportation corridors such as MD Routes 198, 32, and 175 are moderately developed. Much of this development is associated with the Fort Meade installation (Anne Arundel County 1997).

The undeveloped area south of Fort Meade, previously used for military training and transferred to the U.S. Fish and Wildlife Service (USFWS), is currently used as a wildlife refuge and is zoned by Anne Arundel County as governmental/institutional (Anne Arundel County 1997).

Climate

Fort Meade is located in the continental climate zone of the eastern United States, where general atmospheric flow is from west to east. This climate regime is characterized by summers that are long, warm, and often humid as a result of persisting maritime tropical air; however, frequent air mass exchanges result from the influence of either maritime tropical air or continental polar air. Temperate weather prevails in the spring and autumn.

The annual mean temperature at Fort Meade is 61° Fahrenheit (F), with an average daily maximum of 72 °F and minimum of 45 °F. Annual temperature extremes range from -6 °F to 100 °F (USATHAMA 1989). Precipitation averages 41 inches annually, including 22 inches of snow. Rainfall occurs throughout the year, but the greatest amounts occur in the summer (peaking in August) as a result of strong thunderstorms. The region has moderate to high humidity levels throughout the year. Prevailing winds are generally from the west throughout the year, except in September, when prevailing winds are from the south. The windiest period is late winter and early spring. The annual average wind speed is 9.3 mph (Gale Research Company 1985).

3.1 LAND USE

3.1.1 On-Post Land Use

Historically, the Fort Meade development scheme scattered housing, recreational, administrative, and industrial facilities throughout the installation. With the creation of a future on-post land use plan, Fort Meade planners have consolidated many diverse areas into related use areas and have provided a more cohesive pattern for future development. As the post mission changed (principally from troop cantonment to administrative support), additional development was more carefully planned and designated, restricting areas to certain land uses to eliminate incompatible activities. The Fort Meade Land Use Plan Map (Galiber 2000) shown in Figure 3-2 is designed to assist installation planners with siting new facilities. The Plan Map allows for specific development in various areas of the post, identifying 13 siting categories and 3 restrictive land use types. The siting categories are:

- (1) Administrative and academic training,
- (2) Troop housing,
- (3) Family housing,
- (4) Maintenance,
- (5) Medical,
- (6) Retail sales,
- (7) Supply and storage,
- (8) Open space,
- (9) Recreation,
- (10) Community facilities,
- (11) Services/Industries,
- (12) National Security Agency (NSA) lands, and
- (13) Reserve facilities.

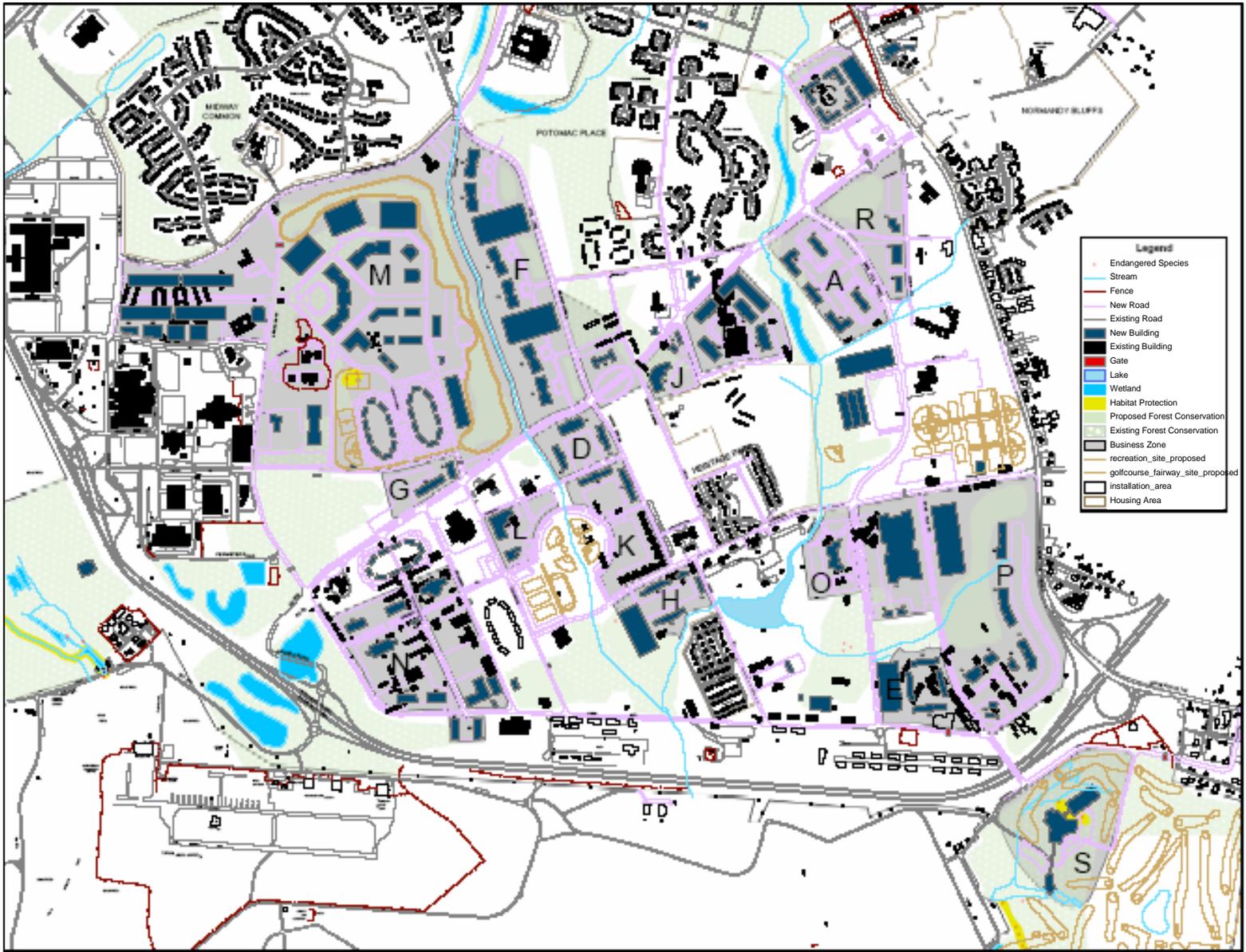


Figure 3-2. Fort Meade Land Use Plan showing postwide arrangement of designated areas by land use categories (Fort Meade 2005).

Within the Fort Meade's planned use map, administration and academic training, family housing, community facilities, and outdoor recreation are the four most widely distributed and common land uses on the post. According to this future land use plan, the project sites considered in this EA fall within land use designated for community use. The Proposed Action would be sited on an existing paved parking lot; parking for the new facility would be via a new, paved 269-space lot to be constructed on an existing grassed playing field. The action alternative site proposed for this project is in the existing grassed playing field; the facility would use the existing paved parking lot that the Proposed Action would have been constructed on.

3.1.2 Regional Land Use and Zoning

Anne Arundel County

Anne Arundel County is located in a central position among (1) the metropolitan growth corridors of Baltimore and Washington, (2) Annapolis, (3) the suburban fringe and rural areas of the Eastern Shore, and (4) southern Maryland. This area is diverse in both its natural environment and land development patterns. Anne Arundel County, though influenced by its central location, has its own character and has developed its own economy. The county contains 447 linear miles of tidal shoreline. Major tributaries of the Chesapeake Bay penetrate 8 to 10 miles inland. "In 1990 nearly two-thirds of the population lived within two miles of tidal waters. This water orientation reinforces the traditional image of Anne Arundel County as a boating mecca with commercial and recreational fishing, maritime industries, and water sports" (Anne Arundel County 1997). Annapolis, located in eastern Anne Arundel County, was established in 1649, and has been the capital of Maryland since 1694. The U.S. Naval Academy is located in Annapolis.

More than 50 percent of the County's land area is developed. Non-residential development (including commercial, government, institutional use, and roadways) accounts for 17 percent of the developed land (Anne Arundel County 1997).

Land classified as non-developed (including natural open space, vacant, and agricultural land) comprises most of the northern part of the county around Baltimore Washington International (BWI) Airport, Marley Neck, and Odenton. Commercial activities are concentrated along MD

Route 2 and MD Route 3 in the Glen Burnie, Annapolis, and Parole areas, with some occurring in Odenton, Severna Park, Crofton, and Maryland City.

Agriculture continues to be a major component of the economic base in Anne Arundel County, occupying an estimated 43,320 acres, or 16 percent of Anne Arundel County land. Farming operations range from crop farms and livestock to timber production and horse breeding. Predominant crops are tobacco, corn, soybeans, hay, and flowering plants. The overall total acres in crop production has declined steadily since 1959, decreasing more than 47 percent by 1992 from 81,700 to 43,300 acres (Anne Arundel County 1997).

Recognizing the unique character of Anne Arundel County's different communities, the Anne Arundel County 1997 General Development Plan divides the county into 16 small planning areas and recommends that a separate, more detailed land-use plan be completed for each. These Small Area Plans will guide officials as they reexamine how individual properties should be used, a review that occurs every 10 years and is known as comprehensive rezoning. The plans also will recommend street, sidewalk, open space and other capital improvements and will target neighborhoods for commercial revitalization and, possibly, mixed use development (Anne Arundel County 2001). Usually zoning laws have segregated the use of property into residential, commercial, and industrial zones. The General Development Plan identifies 16 areas where the County should promote a variety of uses, including jobs, homes, shops, and recreation, in close proximity. The plan recommends four categories of Mixed Use Development: Transit, Employment, Commercial, and Community. The Plan recommends that the County identify greenways, environmentally sensitive areas, and other open space for conservation easements and public acquisition. The plan also suggests that the County create incentives for developers to preserve those areas and to provide sidewalks and trails between subdivisions (Anne Arundel County 2001a).

Revitalization Efforts

Some county areas meeting the eligibility requirements of the State of Maryland's Neighborhood Business Development Program are proposed for revitalization by Anne Arundel County. The commercial redevelopment targets areas that are suitable candidates for State and County

revitalization efforts. Some of these development efforts will most likely occur over the next 6 years, concurrent with Fort Meade's planned "build out" (Fort Meade 2001a).

The Commercial Redevelopment Areas near Fort Meade include: Odenton Growth Management Area, Parole Growth Management Area, Brooklyn Park Corridor, Mayo Road Corridor, Deale/Churchton Business Corridor, Shadyside Business Area, Veteran's Highway Business Area, Wayson's Corner Business Area, Severna Park Business Area, Riviera Beach Business Area, and Mountain Road Business Area.

Of particular interest, within the context of the EA, is the planned development in the Odenton area. Odenton Town Center and the surrounding Odenton Growth Management Area (GMA) extend southeast of Fort Meade and include the North Odenton Business Corridor along MD Route 175, from MD Route 32 to Reece Road. The Odenton Town Center and GMA are designated for commercial revitalization, mixed use, and higher density planned development (Anne Arundel County 1995). *The 1994 Odenton Town Center Plan* includes Fort Meade's Transitional Zone (along MD Route 175) as an employment growth area within the Odenton GMA. Directly north of the installation, at MD Route 175 and the Baltimore-Washington Parkway, is a zone designated for future development as office and retail with high-density residential under the new "community mixed-use" category (Anne Arundel County 2001a).

A prime example of the type of commercial development planned for this area is the Arundel Mills Mall, located two miles west of the BWI Airport, and approximately two miles north of Fort Meade. The Mills Corporation completed construction of this massive complex in 2001. The Arundel Mills Mall is a 1.3 million-SF retail and entertainment facility on 130 acres. The mall provides employment for approximately 3,000 people with approximately 3,000 additional jobs becoming available over the next few years as a result of new commercial development around the mall (Fort Meade 2001a).

Howard County

Howard County is located along the northwestern border of Anne Arundel County and extends to within two miles of Fort Meade. Similar to Anne Arundel County, Howard County is nestled between the large metropolitan growth areas of Baltimore and Washington, D.C. This location

has fostered the development of large residential communities. Foremost among these is Columbia, Maryland. One of the most successful planned communities in the United States, Columbia has, within 20 years, changed the eastern part of Howard County from a major agricultural area to a residential and commercial center.

Columbia, Maryland, an unincorporated, planned community in the New Town (NT) Zoning District, was created in 1965 with an initial area of 13,690 acres. Since 1965, an additional 446 acres have been added, bringing the total to 14,136 acres. Columbia accommodates a variety of land uses, including approximately 295,000 dwellings; 5,300 acres of land committed to parkland and open space; and 18.3 million square feet of office, light industrial, and research and development space. Shopping Centers, schools, libraries, medical, and recreational facilities are also included (Howard County 1999b). The western areas of Howard County remain largely rural and agricultural, although residential development is continuing in these areas.

The total land area for Howard County is 160,640 acres. According to the Howard County Land Use data of July 1, 1997, approximately 112,277 acres (70 percent) were recorded as “Developed/Committed” in the Department of Planning and Zoning (DPZ) Database. The Developed/Committed land use category included: Rural, Low, Medium, and High Density; Mixed Use; New Town; Planned Golf Course Community; and “Other Zones” (non-residential zonings). Committed land may not be developed. This category includes the land in preservation programs, parkland, and open space.

Unbuilt residential lots comprise 6,205 acres (4 percent) of Howard County’s total land area. In the process of being developed are 4,721 acres (3 percent). Only 37,437 acres (23 percent) remain undeveloped. The majority of undeveloped land, 25,354 acres, is zoned for Rural Density (RR-DEO and RC-DEO). There are 3,774 acres in the Low Density residential zoning category (R-20, R-ED) and 2,303 acres in the Mixed Use category (Howard County 1999).

As of September 30, 2000, there were 151 subdivision plans in the review process. If all were approved, they would create 5,340 new housing units. Many of these new projects are phased over several years. Residential subdivision has kept a relatively constant pace over the last five years, creating lots with the potential to accommodate an average of about 2,200 new dwelling

units a year. The mix of single and multifamily housing units created is close to the 1990 General Plan projections (Howard County 2000).

Between October 1999 and September 2000, building permits were issued for 23 nonresidential projects with a gross square footage of 50,000. Ten of these projects were in Columbia, seven were in the I-95 corridor, five in Ellicott City and one in the west part of the County. Permits of more than 100,000 SF include projects in Meadowridge Business Park, the former University of Maryland Horse Farm at MD Route 108/Snowden River Parkway, the Baltimore-Washington Industrial Park and redevelopment of the Chatham Mall (Howard County 2000).

Howard County may continue to receive significant residential growth from surrounding jurisdictions, such as Fort Meade. The portion of the county that is most affected by changes at Fort Meade is the southeast. This area, sandwiched between Interstate 95 and the Anne Arundel County border, is zoned for industrial development, in order to offer area employment opportunities (1990 General Plan Land Use Map).

3.1.3 Geology

Fort Meade is in the Atlantic Coastal Plain Physiographic Province. It is underlain by a wedge-shaped mass of unconsolidated sediments that thickens to the southeast. The unconsolidated sediments overlie crystalline rock of Precambrian to early Cambrian age. The crystalline bedrock underlying Fort Meade consists of gabbro, diorite, and other igneous and metamorphic rocks. The surface of these rocks dips to the southeast and acts as a lower confining layer for the Potomac Group. The premise that the crystalline basement rock acts as a confining layer is based on the low conductivity of similar crystalline rocks in the Maryland Piedmont (USACE 1997).

The series of thick, unconsolidated sediments underlying Anne Arundel County are subdivided (from oldest to youngest) into the Potomac Group, Magothy Formation, and Patuxent River terraces and associated alluvium. The Potomac Group contains five geological units, three of which underlie Fort Meade: the Arundel Clay, the Patuxent Aquifer, and the Lower Patapsco Aquifer. The Arundel Clay is a unit with low vertical hydraulic conductivity and is the confining layer between the Patuxent and Lower Patapsco aquifers. It is visible in northern Anne Arundel

County and consists of red, brown, and gray clay with some ironstone nodules and plant remains (USACE 1997).

Above the Lower Patapsco Aquifer is an unnamed confining layer composed of tough variegated clay that separates it from the Upper Patapsco Aquifer. Alluvium underlies all of the rivers, streams, and marshes of Fort Meade and consists of interbedded sand, silt, and clay with small gravel inclusions (USACE 1997).

3.1.4 Soils

The *Fort George G. Meade Soil Survey* (USDA 1995) identifies 39 distinct soil mapping units on Fort Meade. Most of the soils are part of the Evesboro complex. Evesboro soils are very deep, excessively-drained, sandy loams on uplands. None of the soils on Fort Meade are used for agricultural purposes and there are no farmsteads contiguous with installation areas.

Modified soil areas mapped within Fort Meade include loamy and clayey land, urban land, cut and fill areas, and gravel and borrow pit operations. Loamy and clayey land consists of mantles of various kinds of soil that overlie clay deposits, but which are unrelated to the underlying subsoil. Urban land comprises those areas in the vicinity of pavement and buildings. Cut and fill land consists of severely disturbed areas of miscellaneous soil types that have been altered by earth-moving equipment. Gravel and borrow pit areas define land where soil material has been removed for construction, landfill, or mining operations. Such areas have been altered so severely that their association with a soil series is impossible to determine (USDA 1995).

The soils classifications present on the majority of NSA include the following soils: Urban Land, Evesboro-Urban Complex, Downer Loamy Sand, Downer-Urban Land Complex, Fallsington Sandy Loam, Sassafras-Urban Complex, and Woodstown Sandy Loam (USDA 1995). Most of these soils are on 5 to 15 percent slopes (USDA 1995).

Soils found on the site of the Proposed Action and the action alternative are mapped in the Fort Meade Soil Survey (1995) within the Cut and Fill Land Series, and are designated as Cut and fill land, 0 to 5 percent slopes. According to the soil survey, cut and fill land consists of miscellaneous land types where the soil has been so severely disturbed or altered by machines

that it can no longer be identified by soil series. Most areas mapped under this designation have been graded for home sites, schools, recreation sites, highway exchanges, and industrial establishments. The area proposed for construction of the Proposed Action is on a large, relatively flat existing parking lot; a paved parking lot would be constructed on an existing grassed playing field. Only minimal site grading would be necessary for construction of the Proposed Action. The Action Alternative site is on a relatively flat grassed playing field; it would also require only minimal site grading for construction of the project. Parking for the action alternative would be in the existing paved lot at the site of the Proposed Action; no grading would be required.

3.1.5 Topography and Drainage

The topography of Fort Meade can be best characterized as almost level to gently rolling. The installation has approximately 210 feet of topographic relief. The highest point reaches 307 feet mean sea level (msl) and occurs at the 1st Army Radio Station Tower in the northern-most central part of the installation. The lowest elevation, approximately 97 feet msl, occurs in the southwestern corner of Fort Meade, along the Little Patuxent River (USACE 1997). Average elevation on the post is typically between 140 and 180 feet msl (Fort Meade 1998a).

Most of the installation slopes gradually to the south and southwest. Slopes exceeding ten percent are rare and occur primarily in pockets in the north-central and central parts of the installation, and along stream corridors. These steep slopes usually occur in natural wooded areas, and are ideally suited as vegetated buffer zones for more developed areas. The southern half of Fort Meade contains gradual slopes, generally less than six percent (USACE 1997). The majority of the land at Fort Meade is suitable for building. Slopes found in the area considered for construction under the Proposed Action and the Action Alternative are minimal.

3.2 AIR QUALITY

Fort Meade is located in Anne Arundel County, which is part of the Maryland Department of the Environment (MDE) Air Quality Control Area III, Metropolitan Baltimore Intrastate Air Quality Control Region. This region comprises Anne Arundel, Baltimore, Carroll, Harford, and Howard Counties, and Baltimore City.

The State of Maryland had adopted ambient air quality standards and emission regulations for the following pollutants:

- Particulate matter with diameter of 10 microns or less (PM-10),
- Carbon monoxide (CO),
- Sulfur dioxide (SO₂),
- Nitrogen dioxide (NO₂),
- Lead (Pb),
- Ozone (O₃), and
- Fluorides.

MDE has developed plans, which have been submitted to the EPA, for attaining standards in those areas where ambient air quality monitoring indicates nonattainment of specific standards (e.g., ozone).

Existing ambient air quality monitoring data can be used to describe the air quality in the Fort Meade area. The air quality data reported from the monitoring stations at, and closest to, Fort Meade indicate that the air quality meets National and Maryland Ambient Air Quality Standards for all monitored pollutants except ozone. As part of the Baltimore Area Air Quality Control Region, Anne Arundel County is designated as a severe nonattainment area for ozone (40 CFR 81.321). At the MDE's Fort Meade air quality monitoring station in particular, the federal 1-hour ozone standard was exceeded 4 days, over the 3-year period, 1998 to 2000 (MDE 2001b).

Emissions of criteria air pollutants for registered sources at Fort Meade are summarized in Table 3-1. Criteria pollutants are those pollutants for which an ambient air quality standard has been established. Ozone is not directly emitted from sources, such as those listed in Table 3-1 and, therefore, is not included. Ozone is formed indirectly from other air pollutants, particularly nitrogen oxides (NO_x) and volatile organic compounds (VOCs), that are "cooked" by sunlight under stagnant, hot weather conditions (MDE 2001a).

Under Federally mandated energy reduction efforts, Fort Meade operations and maintenance objectives include the implementation of energy conservation measures (ECMs) that are designed not only to reduce energy consumption but also to reduce pollutant emissions to the

ambient air. Significant reductions in emissions are anticipated as the result of these measures, but the actual amount of emissions decrease projected for Fort Meade has not yet been determined.

Table 3-1. Summary of Annual Criteria Pollutant Emissions by Source (tons per year)^(a)

Source	VOC	NO _x	CO	SO ₂	PM-10	TSP ^(b)
Boilers	0.78	14.18	11.91	0.09	0.9	1.8
Fuel Storage and Transfer	5.44	0.0	0.0	0.0	0.0	0.0
TOTAL	6.22	14.18	11.91	0.09	0.9	1.8
^(a) 2001 Emissions Certification Report for Fort Meade, Maryland, September 2002.						
^(b) TSP – Total Suspended Particulate.						

3.3 WATER RESOURCES

The entire Fort Meade property is in the Little Patuxent River drainage (CH2Mhill 1999). There are three primary tributaries that drain the post; the Midway Branch drains the western section of the base, the Franklin Branch drains the eastern section, and there are two small, unnamed branches in the southwestern corner of the post that drain directly to the Little Patuxent River. The majority of the NSA drains into the two unnamed tributaries. The NSA subwatershed was not assessed during the Fort Meade INRMP survey.

Within the Fort Meade boundaries are approximately 7.2 miles of perennial stream channel, as well as other intermittent stream channels. In August 1997, the U.S. Army Corps of Engineers (USACE), Baltimore District, developed a comprehensive watershed management plan for the protection, environmental restoration, and stewardship of watersheds encompassed by Fort Meade (USACE and ERM 1997). The plan provides specific recommendations for both short-term and long-term strategies and serves as a functional guide for future watershed management on post (CH2MHill 1999).

Stream degradation and erosion problems associated with development on post have also been assessed in the Fort Meade Integrated Natural Resources Management Plan (INRMP). Fort Meade's INRMP recommends addressing these issues using a stream corridor scale management approach. This strategy provides for evaluating the impacts of changes in a particular stream reach on downstream reaches and prioritizes improvements along the entire reach and its

watershed. The major emphasis will be the establishment of a stream corridor restoration and preservation program for each major stream on post (CH2MHill 1999).

Little Patuxent River Protection

The MDE designated the segments of the Little Patuxent River and its tributaries that are upstream from a point 1 mile south of the MD Route 198 bridge as Use I-P Waters. This protected area is located within Department of Interior property near the Patuxent Environmental Science Center that borders Fort Meade to the south (Fort Meade 1998a). Use I-P Waters are protected for water contact recreation, aquatic life, and public water supply. Use I-P Waters may be used for the following activities:

- Water contact sports;
- Play and leisure-time activities where individuals may come into contact with the surface water;
- Fishing;
- The growth and propagation of fish (other than trout), other aquatic life, and wildlife;
- Agricultural water supply;
- Industrial water supply; and
- Public water supply.

Less than a half mile from Fort Meade's eastern boundary lie tributaries of the Severn River which are designated as a Use IV Recreational Trout Waters. These waters have the potential for, or are currently

- Capable of holding or supporting adult trout for put-and-take fishing, or
- Managed as a special fishery by periodic stocking and seasonal catching.

3.3.1 Surface Water

The majority of Fort Meade lies within the 160 square-mile Little Patuxent River Drainage Basin. Near the installation, the river averages 30 feet wide and 2 feet deep. Most of the installation is drained by two tributaries: Midway Branch and Franklin Branch. Surface flow on the installation is primarily south-southwest (Fort Meade 1998a). Fort Meade's watersheds, wetlands, and streams are depicted in Figure 3-3.

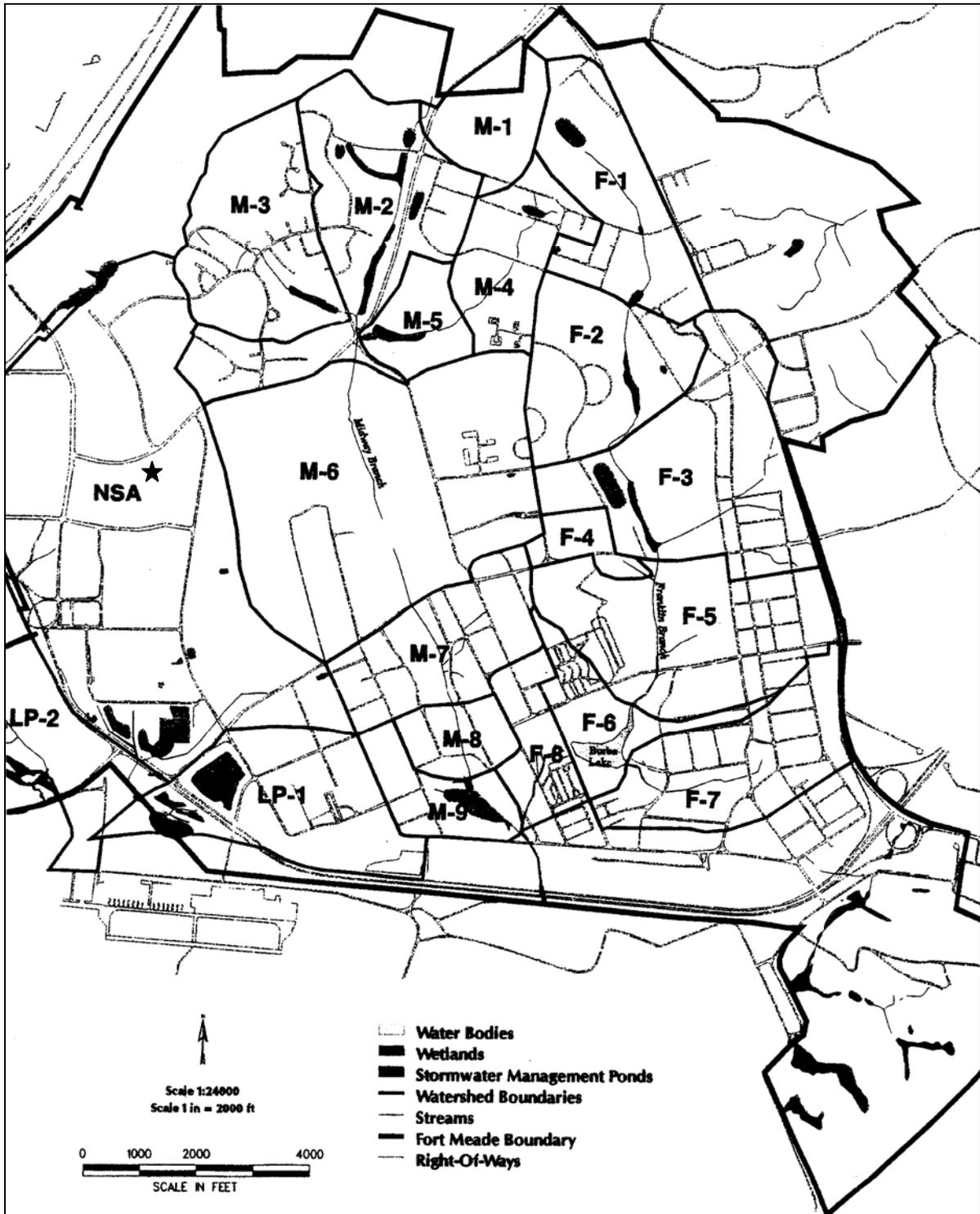


Figure 3-3. Map showing the watersheds, wetlands, and streams within Fort Meade boundaries. Watersheds are designated with letter-number identifiers. Proposed projects site is shown with a black star. (Source: Fort Meade Integrated Natural Resources Management Plan (CH2MHill 1999).

Midway Branch drains the center of the installation and flows southeasterly then southerly to a confluence with Franklin Branch, where it is renamed Rogue Harbor Branch. Its watershed comprises approximately 1,860 acres, located almost entirely within the installation (USACE 1997). Rogue Harbor Branch empties into Allen Lake, a 19.7-acre man-made lake used for stormwater management, flood control, and limited recreational purposes. South of Allen Lake, the tributary drains directly into the Little Patuxent River. There are a large number of drainage swales, ditches, and natural streams and brooks traversing Fort Meade. Some of them flow into Burba Lake, others drain into Rogue Harbor Branch.

Although the NSA was not assessed during the Fort Meade INRMP watershed survey, the site considered for the Proposed Action is located within the northern unnamed tributary that flows offsite directly to the Little Patuxent River.

Storm Water Management

NSA has performed stormwater management assessments for sub-basins A and B within the NSA boundaries (WRA 1997 A, B). Sub-basin A is the northernmost part of NSA and includes a small portion of Berman Tract and the adjacent section of the NSA campus, as well as Fort Meade base housing along Cavalry Road. Sub-basin B includes the mid-section of the NSA campus, from roughly Rockenbach Road southward to Emory Road and including a small portion of the land south of Emory Road and East of Canine Road. There remains, however, a large section of NSA within sub-basin C that has not been evaluated since 1988. As is common throughout the NSA property, the drainage in this area primarily consists of concrete channels. Sub-basin C drains southward, eventually into Fort Meade's stormwater pond located near Perimeter Road. Effective January 2005, Fort Meade submitted NOI to comply with General Discharge Permit 05-SF-5501, NPDES General Permit for discharges from Small Municipal Separate Storm Sewer Systems.

Stormwater from NSA eventually drains into the unnamed tributaries and into the Little Patuxent River. Given the designation of this portion of the Little Patuxent River as USE I-P waters, additional care should be taken to ensure stormwater management practices comply with

applicable regulations and do not contribute to sedimentation in or pollutant loads to the Little Patuxent River.

The Environment Article Title 4, Subtitle 2, Annotated Code of Maryland states that "...the management of storm water runoff is necessary to reduce stream channel erosion, pollution, siltation and sedimentation, and local flooding, all of which have adverse impacts on the water and land resources of Maryland." Code of Maryland Regulations (COMAR) 26.09.01-26.09.02 also requires that all jurisdictions within the state implement a storm water management (SWM) program to control the quality and quantity of storm water runoff from new development. Fort Meade SWM adheres to these principles and has based its management plans and procedures on the Maryland Storm Water Design Manual (MDE 2000) and state and county guidelines. Fort Meade currently operates under National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permit 02-SW-0700 for industrial discharges, Permit GP-00HT for maintenance and repair discharges, Permit 01-DP-2533 and MD-00217-17 for wastewater treatment, and Permit 00-DP-2634 for golf course discharges.

Since new mission and realignment activities recently implemented at Fort Meade have increased development on post, Fort Meade planners follow the installation's Comprehensive Watershed Management Plan developed by the USACE which addresses storm water runoff issues within a larger context. Emphasis has been put on devising more effective SWM techniques. All planned and newly constructed Fort Meade SWM structures are based on designs following the MDE's guidance, published in the 1998 *Maryland Stormwater Design Manual* (MDE 1998; Harmeyer 1998).

There are a total of 19 SWM ponds located throughout Fort Meade (Marquardt 2002). Stormwater controls for new construction projects are considered individually (Galiber 2001). On-post SWM features are incorporated as necessary to comply with state and county regulations.

Fort Meade has been addressing its SWM issues for several years. Installation analysts have recommended that the storm water drainage system, although generally considered adequate to meet existing demands, be expanded with new SWM ponds to control localized drainage

problems. Construction of these facilities, including 19 retention ponds to reduce concentrated flow in main branch channels, has been completed. Potential expansion plans include new drainage catchments (curb, gutter, drains, inlets), possible new or enlarged storm sewers, and channel enhancement to Midway Branch and Franklin Branch (Harmeyer 1999a).

Chesapeake Bay Initiative

The Chesapeake Bay and its 64,000 square-mile watershed comprises a complex “ecosystem” of water and land, creatures and people, culture, and economics. Since the first comprehensive scientific study of the Bay in the mid-1970s, the Chesapeake Bay Program partners (including almost 15 million citizens of the region) have learned a great deal about how this system works, what makes it “sick,” and what needs to be done to keep it healthy.

Excess or waste water, usually from stormwater, runs off the land carrying nutrients, sediments, and even traces of toxic products into nearby creeks and streams. Protection of local waterways feeding into the Bay, therefore, is contingent upon reduced surface water runoff. Fort Meade’s Storm Water Management (SWM) program actively assists in this effort.

Fort Meade is also an active participant in the U.S. Army’s Chesapeake Bay initiative called the Submerged Aquatic Vegetation (SAV) Installation Support Program which is committed to improving the water quality and overall watershed of the Chesapeake Bay as well as protecting, preserving, and restoring the Bay’s water and habitat.

SAV is essential to a healthy Bay ecosystem. It serves as a valuable food source for waterfowl, provides protection from predators, and acts as a nursery and breeding ground for many species of fish and shellfish. Furthermore, the plants help to filter sediment from the water, stabilize the coastal soil, and absorb nutrients, which can be toxic to the biota in excess. For these reasons, SAV has been targeted by many as the key to restoring the Chesapeake Bay to a healthy state.

Strategic implementation priorities have been established as follows:

1. To meet nutrient reduction goals through the tributary strategies.
2. To increase stakeholder involvement in the Chesapeake Bay Program.

3. To implement habitat restoration projects for key habitat areas.
4. To support fisheries management through inter-jurisdictional cooperation and coordination.
5. To implement critical elements of the Revised Toxins Reduction strategy.
6. To reinforce federal and state efforts to reduce atmospheric deposition to the bay.

One method of improving the SAV is through the protection of riparian forest buffers. A riparian forest buffer is an area of trees, usually accompanied by shrubs and other vegetation, adjacent to a body of water and managed to maintain the integrity of stream channels and shorelines. Riparian forest buffers reduce the impact of upland pollution sources by (1) trapping, filtering, and converting sediments, nutrients, and other chemicals, and (2) supplying food, cover, and thermal protection to fish and other wildlife. Fort Meade is committed to preservation of riparian forest buffers; none would be affected by either the Proposed Action or the Action Alternative.

Groundwater

Three aquifers – the Patuxent Aquifer, the Lower Patapsco Aquifer, and the Upper Patapsco Aquifer – underlie Fort Meade. The aquifers are separated by the Arundel Clay formation. The Patuxent Aquifer, which directly overlays the crystalline basement, consists of lenticular interfingering sand, silt, and clay capable of yielding large quantities of water. The aquifer is at or near the surface near the fall line (the boundary between the Coastal Plain and Piedmont Physiographic Provinces) and dips below the surface as it moves eastward. The aquifer is between 200 and 400 feet thick beneath Fort Meade.

The Lower Patapsco Aquifer is composed of fine- to medium-grained brown sand that overlays the Arundel Clay. It is capable of yielding 0.5 to 2 million gallons per day (mgd) of water from individual wells in most localities and is a source of water for several large wells within the region.

The Upper Patapsco Aquifer consists of fine- to medium-sized brown sand. Its average thickness is 250 feet. The aquifer is under confined conditions and is one of the best water-bearing formations in Anne Arundel County.

Flow from all three aquifers is generally toward the southeast. Recharge to deep artesian wells is slow because of the low permeabilities of the confining layers.

Fort Meade withdraws potable water from the Patuxent Aquifer. In general, water from this aquifer is soft (hardness 6 to 8.4 milligrams per liter [mg/l] calcium carbonate), acidic (pH 4.9 to 5.0), high in iron (0.77 to 2.7 mg/l), low in chlorides (5 to 8.4 mg/l), and low in total dissolved solids (38 mg/l). In general, the iron levels in groundwater from the Patuxent Aquifer exceed Federal drinking water standards and require treatment at Fort Meade (USACE 1997).

3.4 AQUATIC RESOURCES AND WETLANDS

3.4.1 Aquatic Resources

The Patuxent River and its associated tributaries and small streams that flow through Fort Meade provide habitat for many aquatic organisms. A list of fish species found in the surface waters on the post is presented in Appendix B.

There are no streams located in the areas designated for the Proposed Action or the Action Alternative.

3.4.2 Wetlands

Section 404 of the Clean Water Act requires Federal regulation of most activities that impact wetlands. The Section 404 requirements support the goal of no net loss of wetlands. Wetland protection and management applies to all Army facilities' engineering activities. Fort Meade lies within the Chesapeake Bay watershed, a region supporting some of the most important wetland areas in the United States.

Wetlands were delineated and mapped throughout the NSA exclusive area by Halliburton NUS in 1995 (1995); they were also delineated in part by Potomac-Hudson Engineering in 2000 (2000). Wetlands were delineated during field visits using the methodology contained in the 1987 Corps of Engineers Wetland Delineation Manual. Wetland vegetation was also previously described as part of Versar's 2001 and 2002 endangered species report for the NSA exclusive area (Versar 2003).

Potomac-Hudson Engineering indicated that the Anne Arundel County, Maryland soil survey was reviewed prior to the delineation to determine the approximate locations of mapped hydric soils on and adjacent to the NSA exclusive area (Potomac-Hudson Engineering 2000). Hydric soils conditions are defined as those that meet the criteria of the National Technical Committee for Hydric Soils (NTCHS 1987), and the NRCS (1998). Saturation in such soils creates anaerobic conditions that typically produce rust-colored mottles in a matrix of gray soil within approximately 6 inches of the surface. Hydric soils frequently are indicated by high chroma mottling in combination with moist soil matrix chromas of 2 or less at the top of the B horizon or a chroma of 1 or less (with or without mottles) at the same depth -- as determined by comparison with standard Munsell color charts.

According to Potomac-Hudson Engineering (2000) soil colors were determined using Munsell color charts; textures were also documented. Where possible, soil samples were examined to a depth of at least 24 inches from the surface. Soil profiles were observed at a number of data collection points. In general, the soils observed were similar physically to the descriptions provided in the county soil survey. Most of the soils observed possessed matrices with Hues of 10YR and 2.5Y; Values and Chromas varied somewhat by depths and site location, but were in the very dark gray to very dark grayish brown (3/1 and 3/2) range for the silty clay soils. Soils throughout the site were generally categorized as silty clay and sandy loam throughout. All of the soils within the mapped wetlands possessed chromas of 2 or less with mottles within major portions of the root zone. Soils outside of the mapped wetlands generally possessed chromas of 2 or greater, usually without mottles.

Based on other data and information presented in the Halliburton NUS and Potomac-Hudson Engineering wetlands reports, as well as Versar's field observations, virtually all wetlands on the NSA exclusive area were forested, and possessed hydric soils, wetland hydrology, and a predominance of wetland vegetation. Several ditches and stormwater facilities were not delineated as wetlands because they did not possess one or all of these criteria.

Of the approximately 5,500 acres that comprise Fort Meade, only 160 acres have been designated as wetlands (Fort Meade 1998a). The majority of those wetlands are situated in the

floodplain of the Little Patuxent River, in the southwestern section of the installation. Information concerning the potential extent and nature of wetlands on Fort Meade was obtained from site visits and nontidal wetlands maps included in the Wetlands Mapping Report for the U.S. Army, Fort Meade (1996). These maps were the result of a wetland survey conducted in June 1996 for the USACE to identify wetlands and other waters of the U.S. for potential jurisdiction under Section 404 of the Clean Water Act. The survey was prepared primarily by stereoscopic analysis of high altitude and aerial photographs. Wetlands were identified from photographs based on vegetation, visible hydrology, and geography in accordance with *Classification of Wetlands and Deepwater Habitats of the United States* (USFWS 1979). There were no attempts in the above-mentioned Fort Meade Wetlands Mapping Report to define federal, state, or local jurisdiction (Geonex 1996). The Fort Meade INRMP also offers maps that identify major wetland areas on post (CH2MHill 1999). These resources were used in conjunction with field reconnaissance to determine the proximity of potential wetlands to the proposed construction sites.

According to the above resources, there are no wetland areas on or adjacent to either the Proposed Action site or the Action Alternative site (see Fig. 3-3).

3.5 VEGETATION

Versar, Inc. recently described existing vegetation as part of its studies to describe threatened and endangered species at the NSA (Versar 2003). The following section describes the existing vegetation at NSA; distinction is made between the relatively undeveloped Berman Tract in the northern section and the “secure area” to the south.

3.5.1 NSA Secure Area

Deciduous Forest

Upland deciduous forest is essentially the sole vegetation type in most of the "semi-natural" parcels inspected in the vicinity of the Proposed Action; wetland deciduous forest also exists in several smaller areas. In most of the upland areas, the deciduous forest is clearly dominated by chestnut oak and willow oak. The largest trees in these parcels appear to be willow oaks; some

of these are as large as 25 to 30 inches diameter at breast height (dbh). Other trees present in these forested areas include black oak, red oak, tulip poplar, and scrub pine. Dominant trees within more mesic areas of the upland forest and within the wetland deciduous forest are typically red maple and sweetgum; small areas also possess black willow, sweet bay magnolia (*Magnolia virginiana*), and black gum (*Nyssa sylvatica*).

The shrub layer varies in the upland deciduous forest from sparse to very dense. Many areas of the forest possess dense areas of poison ivy (*Toxicodendron radicans*); other areas possess virtually impenetrable growths of common greenbrier (*Smilax rotundifolia*). Some areas of the forest also possess dense shrub layers of privet (*Ligustrum vulgare*), Tartarian honeysuckle (*Lonicera tatarica*), and inkberry (*Ilex glabra*). Other upland forest areas possess dense growths of wisteria (*Wisteria sinensis*). The shrub layer in the wetland forest is usually moderately dense. Principal species observed include spicebush, sweet bay magnolia, sweet pepperbush (*Clethra alnifolia*), and saplings of the principal tree species.

Very few herbaceous species are typically present in the upland deciduous forest, presumably because of the density of the canopy and shrub/woody vine layers. Three species that were occasionally present included bracken, partridgeberry (*Mitchella repens*), spotted wintergreen, and hay-scented fern. One interesting plant of note occasionally observed in the upland forest was pink ladies slipper (*Cypripedium acaule*); this plant was sometimes concentrated in dense populations of 30 or more individuals. The herbaceous layer in the wetland forest is somewhat variable, depending on location. Several ubiquitous species, however, included cinnamon fern, skunk cabbage, royal fern, and New York fern. Other herbaceous plants often found in these wetlands were sallow sedge, false nettle, and jewelweed.

3.5.2 Berman Tract

Coniferous Forest

Immediately to the northeast of the West Meade Elementary School is a large, roughly rectangular area (with several smaller branches to the west) of dense coniferous forest that is clearly dominated by scrub pine (*Pinus virginiana*), with scattered areas of loblolly pine (*Pinus taeda*). The coniferous forest also exists in smaller areas on most of the ridge tops at the Berman Tract.

Most of the pines appear to be approximately 25 to 30 years old. The northeastern edges of the coniferous forest also possess moderately-sized chestnut oak (*Quercus prinus*) and American beech (*Fagus grandifolia*). In addition, several large tulip poplar (*Liriodendron tulipifera*) and black oak (*Quercus velutina*) trees exist along the western edge of the coniferous forest.

The majority of the coniferous forest is completely dominated by scrub pine, with almost no shrub/woody vine or herbaceous layers. In smaller areas, however, where there is a break in the canopy, the sub-canopy of the coniferous forest is dominated by chestnut oak (the primary successional species). Some of these semi-open canopy areas contain dense areas of black huckleberry (*Gaylussacia bacata*) and lowbush blueberry. The edges of some areas of the forest also contain some invasive and semi-invasive species, such as poison ivy (*Toxicodendron radicans*), wisteria (*Wisteria sinensis*), perfoliate tearthumb (*Polygonum perfoliatum*), Asiatic bittersweet (*Celastrus orbiculata*), Japanese honeysuckle (*Lonicera japonica*), and tree of heaven (*Ailanthus altissima*). Few other shrub and woody vine species, however, exist within the coniferous forest.

Spotted wintergreen (*Chimaphila maculata*) was the only herbaceous plant regularly observed within the dense coniferous forest. Ebony spleenwort (*Asplenium platyneuron*) was also observed occasionally, but it was not a common plant within the coniferous forest.

Deciduous Forest

Upland deciduous forest exists throughout the majority of the Berman Tract, particularly throughout the western sections. Wetland deciduous forest exists in several small areas, particularly along the small streams in the northwestern and southern parts of the site, and along the edges of the spring-fed herbaceous wetland along the west-central edge of the site (adjacent to I-295).

On the ridgetops and the highest parts of the slopes, particularly in the southern and west-central areas, the upland deciduous forest is clearly dominated by chestnut oak. Willow oak (*Quercus phellos*), however, is dominant on the side slopes. The largest trees on the Berman Tract appear to be willow oaks; these are about 50 inches diameter at breast height (dbh). Other trees present in these areas include black oak, red oak (*Quercus rubra*), and tulip poplar. Dominant trees

within more mesic areas of the upland forest and within the wetland deciduous forest are typically red maple (*Acer rubrum*) and sweetgum (*Liquidambar styraciflua*); small areas also possess yellow birch (*Betula alleghaniensis*), black willow (*Salix nigra*), and black gum (*Nyssa sylvatica*).

The shrub layer in most areas of the Berman Tract upland deciduous forest is moderately dense to dense. Many areas of the forest possess dense, virtually impenetrable growths of common greenbrier (*Smilax rotundifolia*). Some areas of the forest also possess a dense shrub layer of black huckleberry (*Gaylussacia bacata*) and lowbush blueberry. Scattered individuals of chinquapin (*Castanea pumila*) are also present, and are locally co-dominant. The shrub layer in the wetland forest is typically moderately dense. Principal species observed include spicebush (*Lindera benzoin*), swamp azalea (*Rhododendron viscosum*), sweet bay magnolia (*Magnolia virginiana*), possumhaw viburnum (*Viburnum nudum*), and saplings of the principal tree species.

Very few herbaceous species are present in the upland deciduous forest, presumably because of the density of the canopy and shrub/woody vine layers. Three species that were occasionally present included bracken (*Pteridium aquilinum*), spotted wintergreen, and hay-scented fern (*Dennstaedtia punctilobula*). One interesting plant of note occasionally observed in the upland forest was pink ladies slipper (*Cypripedium acaule*). The herbaceous layer in the wetland forest is somewhat variable, depending on location. Several ubiquitous species, however, included cinnamon fern (*Osmunda cinnamomea*), skunk cabbage (*Symplocarpus foetidus*), royal fern (*Osmunda regalis*), and New York fern (*Thelypteris noveboracensis*). Other herbaceous plants often found in the site wetlands were sphagnum mosses (*Sphagnum* spp.), sallow sedge (*Carex lurida*), follicle sedge (*Carex folliculata*), false nettle (*Bohemeria cylindrica*), and jewelweed (*Impatiens duthicae*).

Oldfield

A moderately-sized oldfield exists in a roughly rectangular area near the northern end of the Berman Tract. It appears that the oldfield is an old farmed or grazed field that has not been mowed or otherwise maintained for at least 2 years (possibly up to 5 years). The edges of the southern side of the oldfield possess dense areas of tree of heaven interspersed with scattered

princess trees (*Paulownia tomentosa*). The remainder of the oldfield is dominated by dense areas of Canada goldenrod (*Solidago canadensis*), horseweed (*Conyza canadensis*), and several unidentified species of blackberries (*Rubus* spp.).

Herbaceous Marsh

Several small areas of herbaceous wetlands exist at the Berman Tract (note that wetlands were not delineated as part of this endangered species study). The herbaceous wetlands are generally on the western side of the Berman Tract, along several stream corridors, and in one small spring-fed wetland along the west-central edge of the property. Most of the herbaceous wetlands are dominated by skunk cabbage, cinnamon fern, and sphagnum mosses. The vegetational composition of the spring-fed wetland is somewhat different. In some areas it is dominated by dense areas of cinnamon ferns and New York ferns, and in other (wettest) areas it is dominated by eastern sedge, follicle sedge, sallow sedge, and bur-reed (*Sparganium americanum*). The small shrub, possumhaw viburnum (*Viburnum nudum*), was also present in some areas. The peripheries of the herbaceous marsh are bounded by either wetland deciduous forest or upland deciduous forest (refer to descriptions above), depending on topography, position of adjacent slopes, and landforms.

3.5.3 Fort Meade Vegetation

Previous development throughout Fort Meade has been extensive and few areas currently retain their native vegetation. Fort Meade has partnered with the Maryland Department of Natural Resources (DNR) Forest Service and voluntarily supports the Maryland Forest Conservation Act and the Anne Arundel County “Tree Bill.” All outside contractors are required to follow the State Forest Conservation Manual in planning construction. Fort Meade has inventoried much of the forested area on post. Currently 29 percent, or approximately 1,594 acres, of Fort Meade is woodlands. Figure 3-4 shows Fort Meade’s forest conservation areas (CH2MHill 1999). Plans for future development on post call for most existing wooded areas to remain intact. Fort Meade guidelines established in the INRMP recommend preserving mature trees and wooded buffers during future development. Existing planted areas will be evaluated for additional plantings and more street trees will be added where appropriate (Anne Arundel County 1995).

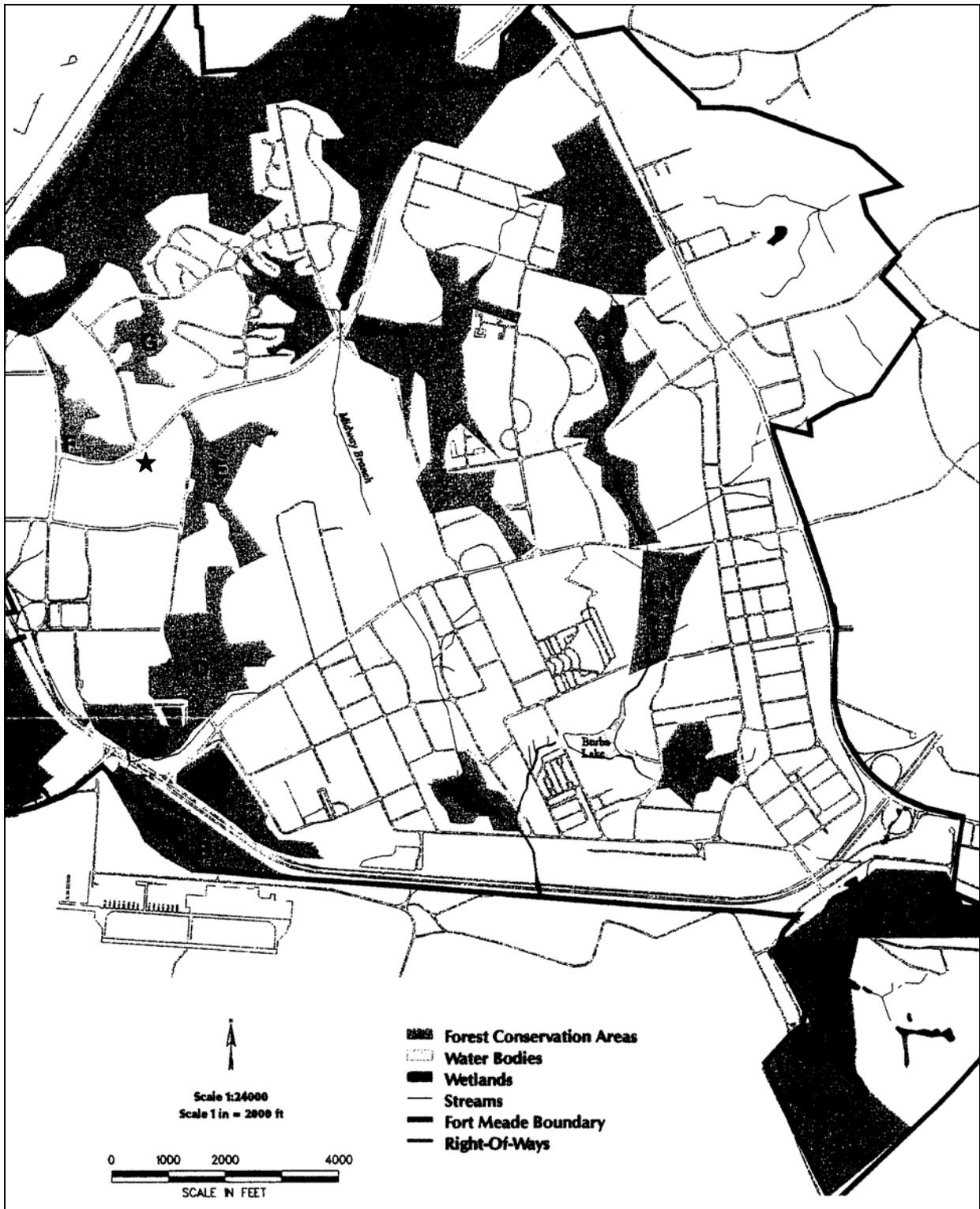


Figure 3-4. Map of Fort Meade showing forest conservation areas. Approximate location of Proposed Action and Action Alternative is indicated by a black star. (Source: Fort Meade INRMP (CH2MHill 1999).)

Natural tree cover on Fort Meade consists of a mixture of softwood loblolly pine, pitch pine and Virginia pine and hardwoods consisting of sycamore, willow, sweetgum, birch, maple, and walnut. The largest wooded area on the installation is within the Berman Tract on the NSA Exclusive Use Area in the northern part of the base. Smaller wooded areas are scattered throughout upland and wetland areas of the installation. They are dominated by white, red, and chestnut oak; mockernut and pignut hickory; flowering dogwood; blueberry; greenbrier; loblolly and pitch pine; and poison ivy (Fort Meade 1999a). A species list of plants found at Fort Meade is presented in Appendix B.

Most of the developed portions of Fort Meade have been landscaped using a combination of turfgrasses, interspersed with native and exotic trees and shrubs, including elm, maple, flowering cherry, black willow, flowering dogwood, and an assortment of holly cultivars. Plant communities at the areas considered for construction were identified during field reconnaissance conducted as part of NEPA investigations in February 2005. The majority of the site for the Proposed Action is an existing paved parking lot between Love Road and 3rd Cavalry Roads, with little existing natural vegetation. Parking for the Proposed Action would be constructed at the grassed playing field immediately north of Newjon Road, near 3rd Cavalry Road. This parking site is currently a grassed playing field with a few scattered small trees and shrubs around its western and southern peripheries.

The parcel proposed for construction under the action alternative is immediately north of Newjon Road, near 3rd Cavalry Road. This site is currently a grassed playing field with a few scattered small trees and shrubs around its western and southern peripheries. Parking for the new facility would be in the existing paved parking lot on the site of the Proposed Action.

3.6 WILDLIFE RESOURCES

3.6.1 NSA Wildlife

Observations of wildlife were included in Versar's reporting for threatened and endangered species in November 2001, May 2002, and July 2002 at NSA. The following section on wildlife is excerpted from Versar's report (Versar 2003).

Few wildlife were observed within the NSA Secure Area, owing to the relatively small size of the forested parcels (as contrasted to the Berman Tract). Species, however, were similar to those observed at the Berman Tract. Mammal species and their signs observed on and adjacent to the study area included white-tailed deer, striped skunk, red fox, raccoon, eastern chipmunk, gray squirrel, opossum, and woodchuck. A variety of other small and large mammals also potentially occur in the study area. Of these mammals, woodchuck and deer were by far most commonly observed in a wide variety of habitats. Deer were very abundant within the study area; adults and their signs were observed in numerous locations. Raccoon tracks were also observed throughout the study area, particularly along streams. Red foxes and their signs were observed in several wooded locations in the study area.

Sixty-three species of birds were identified on or adjacent to the NSA exclusive use area during this study's field surveys (Appendix B). Owing to the timing of many of the observations (primarily during the breeding season), many of the species observed likely breed within appropriate habitats in the study area. In general, most of the birds and their signs were observed in the upland and wetland forested habitats at the Berman Tract.

The only reptiles observed within the study area were eastern box turtle (*Terrapene carolina carolina*), water snake (*Nerodia sipedon sipedon*), and five-lined skink (*Eumeces fasciatus*). Several species of amphibians were identified within the study area. Gray tree frog (*Hyla versicolor*), pickerel frog (*Rana palustris*), green frog (*Rana clamitans clamitans*), southern leopard frog (*Rana utricularia*), and bullfrog (*Rana catesbeiana*) were observed along the streams and water features within the study area. American and Fowler's toads (*Bufo americanus*; *Bufo woodhousii fowleri*) were observed primarily in upland forests throughout the study area. Several red-backed salamanders (*Plethodon cinereus*) were found in the upland forested habitats at the Berman Tract.

As indicated above, the amphibian of note observed during the May 2002 field studies was the mud salamander (*Pseudotriton montanus*). One individual was caught in the small spring-fed wetland along the west-central boundary of the Berman Tract. While distinguishing mud salamanders from red salamanders is sometimes problematic, this identification was confirmed in the field by an experienced herpetologist. As there appear to be relatively few seep and

spring-fed wetlands on the Berman Tract (the requisite habitat for this species), this location may be key for the survival of this species on the site. No other individuals of this species were observed within the study area.

A number of terrestrial and aquatic invertebrates were also observed within the Berman Tract. Adult damselflies and dragonflies were common near aquatic habitats throughout the study area. Butterflies appeared particularly abundant during the May 2001 and July 2002 field studies; species observed include monarch, regal fritillary, cabbage butterfly, black swallowtail, and tiger swallowtail. Gypsy moth caterpillars were observed in forested habitats at the Berman Tract and appeared especially abundant in localized areas of the upland deciduous oak forest, particularly during the May 2002 field visits.

3.6.2 Fort Meade Wildlife

Because most of the installation has been developed and few large continuous tracts of forests remain, it can be assumed that the wildlife species found at Fort Meade are typical of those found in most urban-suburban areas. White-tailed deer are frequently observed on post, especially along the Little Patuxent River. Other mammals that may be found on Fort Meade include the grey squirrel, raccoon, opossum, eastern chipmunk, field mouse, meadow vole, eastern mole, and red fox (USACE 1997). These species are likely to be found on or adjacent to the proposed project sites.

Birds common on the sites are those that have adapted to an urban-suburban existence, such as the American robin, catbird, mockingbird, Carolina chickadee, Carolina wren, house wren, downy woodpecker, common flicker, European starling, house sparrow, rock dove, mourning dove, and song sparrow. These common species are likely to be found on the proposed project sites. Other species, including warblers and raptors, may be found on the installation during migrations. It is unlikely that large numbers of these birds are breeding on the installation, because available habitat is limited (USACE 1997).

Because the greenways and open space parks scattered throughout the installation are maintained as grassy areas and golf courses, their value as wildlife habitat is limited. Areas with greater habitat value are scattered around the installation, with large forested parcels on-post (some with

100 acres or more in the northern and western sections) and more extending off-post to create significantly large clusters of woodland habitat. The conservation of such large contiguous forest that supports forest interior dwelling species (FIDS) is strongly encouraged by the Maryland DNR.¹ Habitat protection for FIDS is mandated in Maryland through regulations authorized by the Chesapeake Bay Critical Area Law (Natural Resources Article 8–1808, COMAR). As part of its role as a stakeholder in the Chesapeake Bay Initiative, Fort Meade intends to sustain these large forested areas where possible, or mitigate de-forested parcels to re-create wildlife habitat following the mandates of the Maryland Forest Conservation Act in a voluntary manner (Harmeyer 2000).

3.7 THREATENED AND ENDANGERED SPECIES

Versar performed a one-year field survey for rare, threatened, and endangered plants and animals within the NSA exclusive use area at Fort Meade in November 2001, May 2002, and July 2002 (Versar 2003). These surveys had three primary objectives: (1) to document the presence of any rare, threatened, and endangered species of federal or state concern or their habitats; (2) to compile a list of resident flora and fauna and their relative compositions; and (3) to identify invasive species problems. As a result of Versar’s recent survey at NSA, one state rare (provisional) salamander, two state watchlist plants, and two former state watchlist plants were identified in the Berman Tract; these species are described below. No rare, threatened, or endangered species or other plants and animals of special concern were observed within the NSA Secure Area.

***Pseudotriton montanus* (Mud Salamander) - State Rare S2?, G5**

Mud salamander is currently under review for possible inclusion on the state list of rare, threatened, and endangered animals of Maryland. It has been assigned a State Rank of S2?, indicating that the species has not yet been approved for listing. The difficulty of finding this species has thus far prevented Heritage from obtaining enough information to confirm this designation or justify granting this species legal protection (Scott Smith, DNR, personal

¹ Guidelines submitted in correspondence to D. Uhrin, 99th Regional Support Command, DoD from M. Slattery, Director, Wildlife and Heritage Division of Maryland DNR, April 16, 1998.

communication). One individual was caught in the small spring-fed wetland along the west-central boundary of the Berman Tract near the location of the Atlantic sedge; the individual was a mature adult of approximately 6 inches in length. According to Conant and Collins (1991), this species typically occurs in springs and muddy seeps; Petranka (1998) indicated that this salamander inhabits muddy or mucky microhabitats in or along the margins of swamps, bogs, springs, floodplain forests, and small headwater tributaries. This salamander was not cited as present at Fort Meade by the recent rare, threatened, end endangered species survey (FGGM 2001).

Carex hirtifolia (Pubescent Sedge) - State Watchlist S3, G5

Pubescent sedge has been assigned a State Rank of S3 by the Maryland Natural Heritage Program and is thus considered a watchlist species in Maryland. Two individuals of pubescent sedge were observed adjacent to a dirt/sand path along the northeastern side of the Berman Tract. The plants were found directly adjacent to the existing path in sandy soil in the slight canopy openings of upland deciduous forest. Predominant adjacent forest species included willow oak, black oak, scrub pine, and common greenbrier. Despite several concentrated efforts to locate additional individuals of the species along this pathway (and in other similar habitats at Berman Tract), no others were found. Because of the small, inconspicuous nature of this plant, and the fact that other similar habitats exist at Berman Tract, however, it is possible that it occurs in several other places. Brown and Brown (1980) indicated that this plant occurs in dry to moist woods and fields; Gleason and Cronquist (1963) indicated only that this plant occurs in dry woods. This plant was not cited as present at Fort Meade by the recent rare, threatened, end endangered species survey (FGGM 2001).

Aronia prunifolia (Purple Chokeberry) - State Watchlist S3, G4G5Q

Purple chokeberry has been assigned a State Rank of S3 by Heritage, and is thus considered a Watchlist species in Maryland. Several individuals of this species were noted in one small area of forested wetlands along the southwestern end of the Berman Tract. No other individuals of this species were noted at the Berman Tract. Predominant adjacent wetland forest species included red maple, sweetgum, yellow birch, sweet pepperbush, and cinnamon fern. Brown and Brown (1980) indicated that this plant occurs in swamps, wet woods, and bogs; Gleason and

Cronquist (1963) indicated that this plant occurs in bogs, swamps, and wet woods. Purple chokeberry was cited as present at Fort Meade by the recent rare, threatened, end endangered species survey (FGGM 2001).

Carex atlantica (Atlantic Sedge) – No Current Status

Eastern sedge is not currently included on the state list of rare, threatened, and endangered plants of Maryland; previously it was assigned a State Rank of S3, and was considered a watchlist species. Approximately 25 to 30 individuals of this species were observed in one small area of spring-fed wetlands along the west-central edge of Berman Tract; no other individuals were observed. The plants were found in and adjacent to the small stream formed near the lower end of the seep. Prominent adjacent marsh plants include cinnamon fern, New York fern, skunk cabbage, and possumhaw viburnum. Brown and Brown (1980) indicated that this plant infrequently occurs in swamps, wet woods, and bogs; Gleason and Cronquist (1963) indicated only that this plant occurs in swamps and bogs on the coastal plain. This plant was cited as present at Fort Meade by the recent rare, threatened, end endangered species survey (FGGM 2001).

Castanea pumila (Chinquapin) – No Current Status

Chinquapin is not currently included on the state list of rare, threatened, and endangered plants of Maryland; previously it was assigned a State Rank of S3, and was considered a watchlist species. The species is an occasional component of the shrub layer in the upland deciduous forest at the Berman Tract. Several small concentrations of Chinquapin, however, were noted near the center (two small parcels) and the northeastern parts of the property. Approximately 15 to 20 individuals exist in the center two parcels; at least 100 individuals exist in the northeastern parcel. The plants observed ranged in size from small saplings to mature individuals with a dbh of about 4 inches and heights of 15 to 20 feet. Some extensive damage, apparently caused by chestnut blight (*Endothia parasitica*) was evident. Predominant adjacent forest species included willow oak, black oak, red oak, scrub pine, and common greenbrier. Brown and Brown (1980) indicated that this plant occurs in dry woods and thickets in the eastern half of the state; Gleason and Cronquist (1963) indicated that this plant occurs in dry or moist acid soils. Chinquapin was cited as present at Fort Meade by the recent rare, threatened, end endangered species survey (FGGM 2001).

Surveys were also conducted at Fort Meade in 1993 and 1994 for the purpose of developing an initial list and locations of threatened and endangered species that may occur on or near the installation (Eco-Science Professionals 1994). The distinct vegetative communities on the installation were also surveyed to determine their suitability for Maryland Natural Heritage listing and to provide baseline data on natural heritage resources.

As a result of the earlier survey at Fort Meade, a total of 15 plants and 11 animals are state-listed as threatened or endangered species and are documented on the installation (Fort Meade 1998a). A summary list presenting the state listing of rare, threatened, and endangered plant species in the vicinity of Fort Meade are provided in Table 3-2.

Table 3-2. State List of Rare, Threatened, and Endangered Plant Species Identified at Fort Meade Between 1993 and August 1994

Scientific Name	Common Name	Maryland Natural Heritage Program Rank
<i>Aronia prunifolia</i>	Purple chokeberry	Watchlist
<i>Carex atlantica</i>	Eastern sedge	Watchlist
<i>Carex leavenworthii</i>	Leavenworth's sedge	Endangered Extirpated
<i>Carex seorsa</i>	Weak stellate sedge	Watchlist
<i>Carex straminea</i>	Straw sedge	Watchlist
<i>Carex tonsa</i>	Shaved sedge	Highly Rare
<i>Castanea pumila</i>	Chinquapin	Watchlist
<i>Cyperus erythrorhizos</i>	Red-rooted cyperus	Watchlist
<i>Cyperus grayi</i>	Asa Gray's cyperus	Watchlist
<i>Helianthemum propinquum</i>	Pine-barren frostweed	Watchlist
<i>Juncus polycephalus?</i>	Many-headed rush	Status Uncertain
<i>Lespedeza stuevei</i>	Downy bushclover	Endangered
<i>Panicum leucothrix</i>	Roughish panicgrass	Status Uncertain
<i>Rhododendron atlanticum</i>	Dwarf azalea	Watchlist
<i>Senecio smallii (sic)</i>	Smallii ragwort	Watchlist

The USFWS is responsible for the listing of endangered and threatened species under the Endangered Species Act of 1973, as amended. Federally listed species are afforded legal protection under the Act; therefore, sites supporting these species need to be identified. The USFWS also maintains a list of "candidate" endangered and threatened species where the current knowledge of threats to the species and its vulnerability are insufficient for listing. Table 3-3

presents the state rank and Federal status of rare, threatened, and endangered animal species found at Fort Meade.

Table 3-3. State and Federal List of Rare, Threatened, and Endangered Animal Species Identified at Fort Meade Between 1993 and August 1994*

Scientific Name	Common Name	Maryland Natural Heritage Program Rank	U.S. Status
<i>Chlorotettix sp.</i>	A cicadellid leafhopper	Status Uncertain	-
<i>Etheostoma vitreum</i>	Glassy Darter	Extremely Rare	-
<i>Gallinula chloropus</i>	Common moorhen	Very rare	-
<i>Limotettix sp.</i>	Eastern sedge barrens	Extremely Rare	-
<i>Lophodytes cucullatus</i>	Hooded merganser	Extremely Rare	-
<i>Percina notogramma</i>	Stripeback darter	Historically Known	-
<i>Pituophis melanoleucus</i>	Northern pine snake	Historically Known	Candidate I/D**
<i>Porzana Carolina</i>	Sora	Extremely Very Rare	-
<i>Reithrodontomys humulis</i>	Eastern harvest mouse	Historically Known	-
<i>Sorex longirostris</i>	Southeastern shrew	Very Rare	-
<i>Sperchopsis tessellatus</i>	A hydrophyliid beetle	Very Rare	-
* Information adapted from Fort Meade 1998a.			
** I/D = Evidence of vulnerability, but insufficient data.			

As a result of the rare species surveys at Fort Meade, five areas were identified as having statewide significance. The five areas include:

- Rock Avenue Shrub Swamp,
- Range Road Obstacle Course,
- Range Road Corridor,
- NSA Antenna Site, and
- Little Patuxent River.

In accordance with the requirements of the Endangered Species Act, agency coordination was initiated with the USFWS; Wildlife and Heritage Division of the Maryland DNR; and Maryland DNR Division of Environmental Review. Correspondence from the USFWS and Maryland’s Wildlife and Heritage Division indicated that no Federally-listed or proposed endangered or threatened species were known to occur on any of the project sites (Ratnassway 2002, Appendix A). Prior correspondence with the Maryland DNR Division of Environmental Review reports

the potential of a state-endangered fish, the glassy darter (*Etheostoma vitreum*), within the Little Patuxent River (Bieber 1998, Appendix A).

3.8 PRIME AND UNIQUE FARMLANDS

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. The land must also be available for these uses (cropland, pasture land, forestland, or other land, but not water or urban built-up land).

Prime farmland has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods (NRCS 2000).

Unique farmland is land other than prime farmland that is used for production of specific high-value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality or yields of specific crops (NRCS 2000).

Scattered pockets of land that contain soils indicative of prime farmland do exist within Fort Meade boundaries, but no agricultural activities are currently pursued in these areas. Soils found on the site of the Proposed Action and the action alternative at the NSA are mapped in the Fort Meade Soil Survey (1995) within the Cut and Fill Land Series, and are designated as Cut and fill land, 0 to 5 percent slopes; these soils are not considered prime farmland.

3.9 WILD AND SCENIC RIVERS

The Maryland Scenic and Wild Rivers Act established state policy to protect the water quality of designated scenic rivers and fulfill vital conservation purposes by wise use of resources within the scenic and wild rivers system. The Patuxent and Severn Rivers have been designated as Maryland Scenic Rivers.

In the Odenton Town Plan, the Patuxent River Policy Plan of 1984 outlines the policy direction for local and state agencies that carry out programs and make regulatory decisions for the Patuxent River Watershed (Anne Arundel County 1995). Policy direction is provided through 10 recommendations:

- A Primary Management Area will be established to identify and manage land from which pollution is most likely to be transported into the river (1/4 mile along mainstem, 1/8 mile along tributaries).
- Programs for providing best management practices and vegetative buffers immediately adjacent to the river and its tributaries will be developed.
- The state, in conjunction with local governments, will survey the watershed and identify major nonpoint source pollution sites.
- The state will develop a cost-sharing program to aid local governments in correcting and managing stormwater pollution from existing developed areas.
- Future development will be accommodated in ways to minimize impact on water quality and maximize existing protection opportunities.
- Additional recreation and open space land will be acquired.
- Existing forest cover will be retained and important sensitive areas will be reforested to protect water quality.
- Prime and productive agricultural land will be preserved.
- Sand and gravel activities will be managed to allow extraction of the resource without damage to the river.
- The Patuxent River Commission will develop and adopt an action program to implement the strategies.

No streams are located on or directly adjacent to any of the sites under consideration in this EA. Fort Meade intends to follow, whenever possible, state recommendations for preserving the Patuxent and Severn scenic rivers.

To provide for a National Wild and Scenic River System, Congress enacted the Wild and Scenic Rivers Act (P.L. 90-542, as amended) (16 USC 1271-1287) in 1968. The Act pronounced:

“It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable

scenic recreational, geologic, fish and wildlife, historic, cultural or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations. The Congress declares that the established national policy of dams and other construction at appropriate sections of the rivers of the United States need to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes.”

As yet, no Maryland rivers are so designated under this Federal act.

3.10 CULTURAL RESOURCES

The 2001 Fort Meade *Integrated Cultural Resources Management Plan* (ICRMP; USACE 2001) updated previous cultural resource information presented in *Fort George G. Meade Cultural Resources Management Plan* (CRMP; Goodwin et al. 1994) and the *Fort George G. Meade Phase II Architectural Summary Report* (Goodwin et al. 1996). The ICRMP identified and evaluated all archeological resources and architectural resources built between 1946 and 1960 at Fort Meade, and determined two resources eligible for the National Register of Historic Places (NRHP): the Post Core Historic District and Building 8688, a water treatment plant. In addition, the ICRMP added information to the *Phase I Archeological Survey of Approximately 2,210 Acres at Fort George G. Meade, Maryland* (Goodwin et al. 1995), and identified a total of 36 archeological sites; 13 of the sites have been found not to be eligible for listing in the NRHP, 19 of the sites are recommended for additional evaluation prior to any soil disturbance, and 4 of the sites are cemeteries and are recommended for avoidance.

The 1996 CRMP developed a predictive model for areas of archeological sensitivity. After the CRMP was finalized, an archeological survey of extensive areas on Fort Meade was conducted. The results and recommendations were presented in a technical appendix to the CRMP, entitled *Phase I Archeological Survey of approximately 2,210 acres at Fort George G. Meade, Maryland*. The predictive model was critically evaluated through intensive archeological investigation of areas determined to exhibit a high potential for containing cultural resources. The model identified a total of approximately 2,210 acres (5,461 hectares) of high probability land within

Fort Meade and determined that some 1,395 (3,447 hectares) of those had been subjected to various degrees and types of disturbance.

A pedestrian reconnaissance study of all 1,395 disturbed acres was performed that entailed visual inspection and photo documentation of lands so designated, as well as excavation of random auger and shovel tests to determine the nature and degree of disturbances and to ascertain the need for more intensive examination. Of the total high probability portions of the installation, 100 percent of the undisturbed areas (approximately 815 acres/2,014 hectares) and some 350 acres (865 hectares) of the disturbed sections were subjected to intensive, systematic shovel testing. The results and recommendations of this archeological testing at Fort Meade is documented in the technical appendix to the CRMP; Phase I Archeological Survey of Approximately 2,210 acres at Fort Meade, Maryland (Goodwin et al. 1995). In 1997, additional field work was conducted on 19 small parcels recommended for Phase I testing in the 1995 report. No additional sites were identified as a result of this survey.

Correspondence received from the Maryland Historical Trust, Development, Office of Preservation Services, indicates that there are no known sites of cultural significance on the site of the Proposed Action, or the action alternative (Appendix A, Cole 2005).

Historic Architectural Resources

The 2001 ICRMP evaluated all historic architectural resources at Fort Meade built between 1946 and 1960; other resources were evaluated in previous documents. The 1994 CRMP included a comprehensive reconnaissance-level survey of 501 historic resources (Goodwin et al. 1994). The CRMP found the Post Core Historic District eligible for the NRHP under Criterion C. The ICRMP indicated that the historic district included 124 permanent buildings constructed between 1928 and 1940, and encompasses the original, formally-planned core of the installation. It must be noted, however, that 113 of these historic resources were privatized in 2001 after publication of the ICRMP; this left Fort Meade with only 14 of these historic structures (DiGiovanni 2005).

The 1996 Fort George G. Meade Phase II Architectural Summary Report evaluated the potential significance of 61 resources (Goodwin et al. 1996). The architectural summary report found Building 8688, a water treatment plant, eligible for the NRHP under Criterion C for its Art

Moderne design. The Maryland State Historic Preservation Officer (SHPO) concurred with this determination in November 1996. Fort Meade's WWII temporary frame buildings have been addressed under the 1986 Programmatic Memorandum of Agreement between the Department of Defense, the National Conference of State Historic Preservation Officers, and the Advisory Council on Historic Preservation. Thus, the installation has been entirely surveyed for historic architectural resources and two resources have been determined eligible for the NRHP: the Post Core Historic District and Building 8688. No historic structures are located on or near the construction sites for the Proposed Action or its action alternative.

3.11 HAZARDOUS, TOXIC, AND RADIOACTIVE SUBSTANCES

The EMO/DPW coordinates inventories of hazardous materials and disposal of hazardous waste. Emergency response to spills of hazardous waste and materials is conducted through on-site coordinators, installation fire department, and installation hazardous material team.

3.11.1 Underground Storage Tanks and Aboveground Storage Tanks

No underground storage tanks (USTs) are located in the vicinity of the planned construction activities (DiGiovanni 2002).

3.11.2 Polychlorinated Biphenyls

Polychlorinated Biphenyls (PCBs) are mixtures of synthetic organic chemicals with the same basic chemical structure and similar physical properties. PCBs were used in hundreds of industrial and commercial applications in the past due to their non-flammability, chemical stability, high boiling point, and electrical insulating properties. They have been used in electrical, heat transfer, and hydraulic equipment; in paints, plastics and rubber products; in pigment, dyes, and carbonless copy paper; as well as in other applications. The manufacturing of PCBs was terminated in 1977. PCBs have been shown to cause a variety of adverse health effects. Studies in humans provide supportive evidence for the potential carcinogenicity and non-carcinogenic effects of PCBs. Non-carcinogenic effects include effects on the immune system, reproductive system, nervous system, and endocrine system (EPA 1999c).

EPA regulation 40 CFR 761.30 requires that all 480-volt PCB transformers have advanced primary protection, be removed, or be reclassified to non-PCB status through a retrofit process.

Subsequently, the decision to replace or retrofit was clarified by Engineering Technical Letter 1110-3-412 *Transformer Application Guidance* which specifically required the replacement of transformers with PCB concentrations of more than 1,000 parts per million (ppm).

EPA regulation 40 CFR 761 Subpart B regulates the use of PCBs and PCB items, including the use of transformers and capacitors containing PCBs. Regulation 40 CFR 761.30 indicates that the use of network PCB transformers with higher secondary voltages (secondary voltages equal to or greater than 480 volts) in or near commercial buildings is prohibited. Network transformers that are removed from service in accordance with this requirement must either be reclassified to PCB-contaminated or non-PCB status, placed into storage for disposal, or disposed of.

Transformers are classified into three categories based on the PCB-concentration within the unit. The categories are PCB (more than 500 ppm), PCB-contaminated (50 to 499 ppm), and non-PCB (less than 50 ppm).

Fort Meade has removed all PCB transformers with PCB concentrations exceeding 500 ppm. There are three possible PCB-contaminated transformers (concentrations between 50 ppm and 499 ppm) located within the MacArthur Manor area (3000 Housing Area, Puls 2002). No PCB transformers are located on the Proposed Action site, or either of the alternative sites. However, the 3000 Housing Area is adjacent to Alternative site 1. PCB contamination issues are being addressed under a separate action.

3.11.3 Radon

Radon is an invisible, odorless radioactive gas formed by the natural breakdown or decay of uranium, a naturally occurring element found in granite and certain other types of rock. Radon gas dissipates in outdoor settings and is present at concentrations considered to be harmless. However, radon gas can accumulate inside enclosed spaces and represent a health risk to occupants. In general, the risk increases as the level of radon and the length of exposure increases. There is an increased risk of developing lung cancer when exposed to elevated levels of radon. The EPA has established a guidance level of 4 picocuries per liter (pCi/L) of radon in indoor air for residences; however, there have been no standards established for commercial structures. Radon gas accumulations above 4 pCi/L are considered to represent a health risk to

occupants (Internet Radon Research Center and EPA Sources of Information on Indoor Air Quality for Radon, August 1999).

In response to concern over indoor air concentrations of radon, the Army formulated the Army Radon Reduction Program (ARRP). The objectives of ARRP are to

- Identify structures owned and leased by the Army that have indoor radon levels greater than 4 pCi/L of air.
- Modify all Army-owned structures having radon levels greater than 4 pCi/L so that levels are reduced to 4 pCi/L or less.
- Provide detailed guidance concerning radon measurement procedures and risk estimates that have been published in the U.S. Army Environmental Health Agency Technical Guide No. 164.
- Issue mitigation strategies and procedures that will be addressed in separate publications furnished by the USACE.

The Army has adopted EPA's recommended remedial action level as its indoor radon standard. Levels of radon exceeding 4 pCi/L of air require mitigation efforts. Radon monitoring at Fort Meade is complete. The results from the survey have found that indoor radon concentrations are within the EPA acceptable levels and, therefore, require no further action (Colianni 1999).

3.11.4 Hazardous Materials and Waste

Procedures for handling, storage, transportation, and disposal of hazardous materials and wastes are outlined in the *Installation Hazardous Waste Management Plan, Fort George G. Meade* (USACHPPM-North 2004). The plan also outlines command responsibilities, identification procedures, inspections, personnel training, and spill response and emergency procedures.

Fort Meade generates relatively small quantities of a variety of hazardous wastes. The *Installation Hazardous Waste Management Plan, Fort George G. Meade* (USACHPPM-North 2004) identifies 32 hazardous waste generators on the installation including the Directorate of Public Works, Directorate of Logistics, and the Directorate of Personnel and Community Activities. An analysis of annual waste disposal data in the *Bi-annual Hazardous Waste*

Generators Report (Fort Meade 2001c), filed with MDE, indicated that Fort Meade generated 71,285 pounds per year (lb/year) of regulated waste in 2001. In addition, 59,631 lb/year of non-regulated wastes were generated on Fort Meade during the same year (Kandt 2002).

Pesticides, Herbicides, and Fertilizers

A pesticide is any substance or mixture of substances that is intended to prevent, destroy, or mitigate any pest. This term also applies to herbicides when the substance or mixture of substances is used to destroy or inhibit plant growth. Because these substances are designed to adversely affect living organisms, they create a potential health risk to humans, animals, and the environment. In the past few years, increasing scientific and public attention has been focused on the potential adverse effects of man-made chemicals on public health. There is an increasing amount of evidence that these synthetic chemicals, also found in fertilizers, interfere with the normal endocrine system functioning in humans and other animals (EPA 1999a, b, c).

3.11.5 Contaminated Areas

Congress enacted the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), commonly referred to as Superfund, on December 11, 1980. This act is targeted at the cleanup of areas contaminated by releases of hazardous substances into the environment. CERCLA assigns accountability for cleanup costs of contaminated areas by providing federal authority to respond directly to the hazardous substance releases that may endanger public health or the environment. This act created a tax on the chemical and petroleum industries that formed a trust fund used for cleaning up abandoned or uncontrolled hazardous waste sites. CERCLA also requires the EPA to establish and maintain a National Priorities List (NPL) of the most serious uncontrolled or abandoned hazardous waste sites requiring long-term remedial response actions (EPA 1999a; MDE 1999).

Fort Meade was designated a NPL site on July 28, 1998. The EPA designated Fort Meade a NPL site based on the evaluation of four locations, the Defense Reutilization and Marketing Office (DRMO), Active Sanitary Landfill (ASL), Clean Fill Dump (CFD), and Post Laundry Facility (PLF), that have been identified as past storage and disposal sites for hazardous materials and wastes that contained hazardous substances.

The NPL listing includes BRAC and non-BRAC portions of Fort Meade. An estimated 8,848 acres of Fort Meade were originally targeted for closure; 8,100 acres of the BRAC property have since been transferred to the Department of Interior's Patuxent National Research Refuge (PNRR) for use as a wildlife refuge. The Active Sanitary Landfill encompasses approximately 308 acres of the BRAC property and has been obtained by the U.S. Army. Approximately 366 acres of property is occupied by Tipton Army Airfield (TAA), which was transferred to Anne Arundel County to serve as a General Aviation Facility the fall of 1999.

Environmental cleanup of potentially contaminated sites on Fort Meade has consisted of a combination of removal actions, eliminating the threat to public health and the environment by removing hazardous substances from the site, and remedial actions the permanent cleanup of contaminated areas. Removal actions have been completed at the DRMO site and the TAA parcel. Environmental investigations are currently being performed at eight sites within the BRAC property and at three non-BRAC sites (ASL, DRMO, and PLF). Remedial investigations are occurring at 11 sites and several additional removal actions and remedial actions are planned within the next few years. In addition, in order to comply with obligations under the RCRA, the U.S. Army has recently identified Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) on non-BRAC portions of Fort Meade (EPA CERCLA Information Site, the Superfund NPL Assessment Program (SNAP) Database, Fort George G. Meade Site; EPA Region 3).

Contaminated areas investigated under the CERCLA actions are generally located along the southern border of the installation and all are undergoing investigative or remediation activities at this time. Areas of industrial contamination are located along MD Route 32. The contaminated areas are located down gradient from the proposed sites, none on or near the areas of proposed construction.

Other contaminated sites include all inactive landfills on post located at TAA and landfill cells 1, 2, and 3. Landfills 2 and 3 at TAA have been closed and capped, and all other post landfills are to be closed and capped in the near future. The Fire Training Area and Post Laundry facility (Building 2250) both have well monitoring activities being conducted on site. Both the Battery Shop building (Building 2283), which has lead in the groundwater, and areas long the MD Route

32 corridor, known to have petroleum products in the groundwater, have well monitoring in place and are undergoing further investigation to recommend cleanup procedures (Gebhardt 1998).

The installation's CERCLA initiative is currently operating parallel to investigative procedures for this assessment. As part of the CERCLA process, contaminated areas are being sampled to determine the extent of contamination. Treatment systems are currently in place and monitoring is being conducted to determine further courses of action. Because investigative procedures and remediation activities for Fort Meade's CERCLA initiative continue to be performed concurrently and separate from this assessment, those processes will not be addressed in detail in this EA.

3.11.6 Permits and Regulatory Authorizations

Fort Meade operates under a number of permits from various state and federal agencies. Table 3-4 lists the primary permits and authorizations issued to Fort Meade.

3.12 INFRASTRUCTURE

3.12.1 Utilities

3.12.1.1 Potable Water Supply

Fort Meade obtains the majority of its the potable water on the installation from a combination of an intake in the Little Patuxent River and five groundwater wells. Under normal conditions, the Little Patuxent River supplies 75 percent of the water requirements of Fort Meade. Daily demands are met by using a mix of surface water and the groundwater wells. For the past two years, however, the groundwater wells have been providing 100 percent of Fort Meade's water because of problems with the river basin and the weir at the intake of the low lift pump station (Moyer 2005). The river water intake and low lift pumping station are located approximately 3000 feet from the installation water treatment plant. The raw water is transported via one 12-inch transit pipe and two 12-inch cast iron pipes (Fort Meade 1998a). The Little Patuxent River capacity is approximately 4.5 mgd (Stickland 2002). The groundwater wells were installed at Fort Meade to take advantage of the Patuxent Aquifer. The wells have static water levels ranging between 80 and 120 feet below the surface. The individual well capacities vary from

Table 3-4. Permits and Regulatory Authorizations at Fort Meade, Maryland

Permit Name or Authorization	Permit Number	Date Issued	Date Expired	Building or Location	Issuing Authority	Authorized Activity
National Pollutant Discharge of Elimination System (NPDES) Groundwater Discharge Permit	00-DP-2634	08-01-00	08-01-05	Golf Course	MDE	Fort Meade is authorized to discharge 133,000 gallons per day of final effluent to irrigate the golf course.
NPDES Wastewater Treatment Plant Permit	01-DP-2533 and MD-00217-17	3-1-02	02-28-07	Advanced Wastewater Treatment Plant (AWTP)	MDE	Fort Meade is authorized to use the outfall to the Little Patuxent River and to establish internal monitoring at Special Processing Center (No. 301), Special Processing Center (No. 401), and Advance Packaging Center (No. 501).
NPDES Stormwater Discharge Permit	92-GP-0001	12-01-97	11-30-02	Various	MDE	Allows discharge of stormwater from industrial facilities.
NPDES – General Discharge Permit	GP-00HT	08-28-00	08-27-05	Various	MDE	Allows discharge of stormwater from maintenance and repair activities, water main flushing, etc.
General Oil Operations Permit	99-OPT-3191	04-29-99	04-29-04	Various Tanks	MDE	Fort Meade is authorized to receive oil deliveries by truck to any tank on base. No. 2 fuel oil may be stored on base.
Water Appropriations and Use	AA69G021(03) and AA69S021(01)	01-01-91	01-01-03	Groundwater Wells and the Little Patuxent River	Maryland DNR	Withdrawals of potable water of 2 mgd from each of six wells and 5.20 mgd from the Little Patuxent River is authorized.
Secondary Scrap Tire Collection Facility License	1999-RSC-0097	09-30-99	09-30-04	DRMO Recycling	MDE	Collect and store up to 1,500 scrap tires at each of the two sites, prior to their disposal.
Secondary Scrap Tire Collection Facility License	1999-RSC-0098	09-30-99	09-30-04	Army and Air Force Exchange Service (AAFES)	MDE	Collect and store up to 1,500 scrap tires at each of the two sites, prior to their disposal.
Synthetic Minor Permit	003-00322	10-5-01	02-28-06	Various	MDE	Fort Meade is authorized to limit emissions to less than 25 tons per year of NOx. Compliance with this permit allows Fort Meade to be recognized as a synthetic minor source.

650,000 (tgd) to 1.44 (mgd). There are approximately 30 days a year when water withdrawal from the Little Patuxent River is restricted. Reasons include hazardous spills and road salt contamination. During these times, capacity is sustained 100 per cent by the existing groundwater wells.

The installation operates the withdrawal of water under two Water Appropriation and Use permits from the Maryland DNR, Water Resources Administration. One permit allows an average of 2 mgd of water to be withdrawn annually from each of the installation's groundwater wells. The other permit allows an average of 5.2 mgd of water to be withdrawn annually from the Little Patuxent River. The installation uses approximately 3.3 mgd on average, which is approximately 40 percent of the plant's capacity. Peak summer demand rarely exceeds 6 mgd. Fort Meade also maintains approximately 3.5 million gallons of water for emergency use in eight storage tanks on the base (USACE 1997).

Fort Meade operates its own water treatment plant located in the southwest quadrant of the installation cantonment area near the intersection of Mapes and O'Brien Roads; the water treatment and supply operation is scheduled to be privatized by late 2006 (Moyer 2005). The water treatment plant, a multimedia filtration plant with a clearwell capacity of 2 million gallons, receives raw water from both the river and the wells. The treatment capacity of the plant is 8.2 mgd. The plant contains three clearwells with a total capacity of 2 mgd. The water is treated for turbidity, iron, and manganese. Fluoride is added to the water before it is distributed (USACE 1997).

Using the Fort Meade installation population figures per the Army Stationing and Installation Plan, the average per capita Fort Meade water consumption is approximately 90.0 gallons per capita per day (gpcd). This consumption figure is consistent with normal planning figures used in the engineer planning books; "Civil Engineering Reference Manual" (Lindeburg 1997) and "Standard Handbook of Engineering Calculation" (Hicks 1994). The existing water treatment and distribution system can support a population range of approximately 54,000 to 91,000 persons (Fort Meade 1998a).

3.12.1.2 Sewer and Wastewater

Fort Meade operates its own sewage treatment system. The Advanced Wastewater Treatment Plant (AWTP), formerly Sewage Treatment Plant No. 2, was completed in August 1983. The facility is located in the southwest corner of the installation along the Little Patuxent River at the intersection of MD Route 198 and MD Route 32. The AWTP operation will be privatized by late 2006 (Moyer 2005).

The AWTP treats approximately 2.5 mgd, but has an average daily design capacity of 4.5 mgd. The outfall from the AWTP discharges into the Little Patuxent River. Approximately 16,000 wet tons of sludge material are generated annually and disposed of by contract, as a soil amendment (USACE 1997). Based on Fort Meade installation population figures per the Army Stationing and Installation Plan, the average per capita Fort Meade sewage treatment is approximately 70.3 gpcd, 78 percent of the installation average per capita water consumption (90.0 gpcd; Fort Meade 2001).

3.12.1.3 Energy

Energy capacity distribution on Fort Meade, including electricity, natural gas, and fuel oil, are described in the following subsections.

Electrical Power

Baltimore Gas & Electric (BGE) currently provides part of the electricity to Fort Meade and all of it to the surrounding off-post area. A 115-kilovolt (kV) transmission line brings electricity to government-owned master substations on the base. The existing primary source for approximately 79 percent of Fort Meade's power is a 110 kV feederline (3 phase-4 wire) redundant feeder pair from the BGE Waugh Chapel Power Station that is found along the south and east sides of the installation (along MD Route 32) on steel towers and terminates at Substation 3. The remaining 21 percent of Fort Meade's power is provided from NSA's Substation 2A. The installation's primary distribution system is composed of both underground and overhead lines. The majority of the distribution system is overhead on wooden power poles. Portions of the distribution system were constructed in the 1940s.

Fort Meade, however, is in the process of privatizing and upgrading all on-base electrical facilities through BGE and Constellation Energy. A new electrical substation will be constructed in the vicinity of the existing substation; tentative completion of the work is September 2008. Because recent studies have recommended that consideration be given to placing the secondary overhead system underground (Fort Meade 1998a), all above-ground distribution facilities will be relocated underground as part of the privatization upgrades. Recent studies indicate that the new transmission and distribution facilities will be able to handle the projected growth at Fort Meade without impacting power supply redundancy (Moyer 2005).

Natural Gas

Fort Meade is supplied with natural gas by BGE. BGE natural gas is supplied via high pressure (100 lbs pressure per square inch) mains, which form a loop around the installation. The natural gas is supplied to the Government distribution system via 5 BGE bulk gas meters; the pressure is reduced to 10 lbs pressure per square inch. The natural gas distribution system at Fort Meade, including primary mains and service connections, is extensive and runs throughout the installation. Fort Meade is also in the process of privatizing and upgrading all on-base natural gas facilities through BGE and Constellation Energy; tentative completion of work is September 2008. Fort Meade's two oil-fired central steam plants were decommissioned in 2000 by Fort Meade's Energy Savings Performance Contracting contractor (Moyer 2005). New gas-fired boilers installed throughout the installation have replaced old centralized oil-fired boilers. The proposed project evaluated in this document would be served by natural gas.

Fuel Oil

Number 2 fuel oil is used throughout the installation as fuel for individual heat plants. The oil is stored in both aboveground and underground storage tanks (AGTs and USTs, respectively) near the heat plants they service. There are currently 7 USTs and 43 AGTs remaining on post; however, not all contain fuel oil (DiGiovanni 2002). The proposed facility would not use fuel oil as a heating source.

3.12.2 Solid Waste

Fort Meade has its own *Integrated Solid Waste Management Plan* (ISWM) that defines procedures for disposal of solid waste on the installation, including municipal solid waste and recyclable materials. In accordance with the Federal Facility Compliance Act of 1992 (FFCA), Fort Meade's ISWM Plan complies with the Solid Waste Disposal Act (SWDA) amended to include Federal installations.

From residential, office, and industrial sources, Fort Meade currently generates an average of approximately 9,358 tons per year of solid waste or 25.6 tons per day (tpd) (Marquardt 2005). During 2004, approximately 11.05 tons of municipal solid waste per day from Fort Meade was disposed of through the Annapolis Junction Transfer facility.

The remaining 14.55 tons per day consists of recyclable materials, much of them generated from installation daily maintenance activities. According to information provided by the Fort Meade EMO office, approximately 519.58 tons (1.42 tons per day) of recyclable large and small sized yard waste were recycled by Fort Meade through A-A Recycle and Sand, Inc., and MES regional Composting Facility in 2004. As reported by the DPW's Environmental Management Office, an estimated 4,365 tons of other types of recyclable materials (11.65 tons per day) were received into the Fort Meade Recycling Program during the year 2004 (Fort Meade DPW EMO 2001; Marquardt 2005).

Recyclable materials such as aluminum and paper products are recycled through the Fort Meade Recycling Center. The remaining solid waste generated per day is made up of other recyclable materials such as yard waste, scrap metal (steel), used tires, and waste oil, and are recycled through Fort Meade's DRMO Recycling and other recycling programs (Fort Meade 1998b, Marquardt 2005).

Fort Meade's solid waste is ultimately transported to the King George Landfill in King George, VA for disposal. The total capacity of the King George Landfill is 31,850,000 tons (45,500,000 cubic yards). The estimated remaining capacity of the King George Landfill, as of Spring 1999, was 28,850,000 tons. Any solid waste that is not accepted through the Annapolis Junction

Transfer facility is disposed of at the Millersville Sanitary Landfill in Anne Arundel County; the amount is negligible (Fort Meade 1998b).

3.12.3 Transportation

3.12.3.1 Surrounding Road System

Fort Meade is located in the western portion of Anne Arundel County and comprises approximately 5,415 acres. Three major highways provide access around the perimeter of the installation as follows:

- The Baltimore-Washington Parkway (MD Route 295) is located just west of Fort Meade and provides north/south access between Baltimore and Washington, D.C. No heavy trucks are permitted on the Parkway south of MD Route 175.
- MD Route 175 borders the north and east boundaries of Fort Meade and provides for east/west travel between Columbia and Odenton. MD Route 175 provides access to other major roadways such as MD Route 32, the Baltimore-Washington Parkway, I-95, and US 29. MD Route 175 has a varying width that provides a two-lane roadway from Rockenbach Road to Reece Road, then widens to a minimum four-lane roadway from Reece Road to MD Route 32.
- MD Route 32 borders the southern portion of Fort Meade and provides for east/west travel from I-97, east of Odenton, to Howard County. In the vicinity of Fort Meade, MD Route 32 has a four-lane divided cross section and primarily functions as a freeway. However, at grade signalized intersections are provided along the Fort Meade boundary at Mapes Road and MD Route 198. Interchanges are provided along MD Route 32, at both MD Route 175 and the Baltimore-Washington Parkway.

The major roadways providing access through Fort Meade include Rockenbach Road, which extends from MD Route 175 southerly to MD Route 32 through Fort Meade, and Mapes Road, which traverses east/west through Fort Meade between MD Route 175 and MD Route 32.

Other state roadways providing access to the Fort Meade area include Ridge Road (MD Route 713), Reece Road (MD Route 174) and Laurel-Fort Meade Road (MD Route 198). The first two

roadways provide for north/south travel north of MD Route 175. During 2001, MD Route 713 was upgraded to accommodate increased traffic generated by the Arundel Mills Mall. MD Route 198 extends from MD Route 32 on the south side of Fort Meade, westerly into Laurel and then Howard County.

3.12.3.2 Access to Fort Meade

Direct access to Fort Meade is via several entrances from MD Route 175, MD Route 32, and MD Route 295. From the east, Fort Meade can be accessed from MD Route 175 at Rockenbach Road, Reece Road, Mapes Road, and Llewellyn Avenue. From the south, Fort Meade can be accessed from Pepper Road after it crosses MD Route 32, from the Mapes Road intersection with MD Route 32, and from two locations near the NSA facility in the southwest corner of the base. NSA can be accessed directly from MD Route 295.

However, increased security on post, implemented since September 11, 2001, has rerouted entering traffic through security check points at all gates that will be in place indefinitely (Gebhardt 2001a). All civilian and military personnel must enter the installation through these check points. Because of this situation, traffic backups along MD Route 175 before post entrances are now common during all hours of the day and night. Traffic on post, however, remains relatively normal. A follow-up traffic assessment planned for Fort Meade has been postponed pending relaxation of these strict anti-terrorism measures (Gaphardt 2001a).

Results of a traffic study conducted in 1999-2000 are presented below as an example of normal traffic conditions as surveyed during the time period prior to the implementation of access restrictions.

3.12.3.3 Existing Traffic (prior to access restrictions)

As part of a recent NEPA assessment of normal Fort Meade traffic conditions conducted in 1999, traffic counts were made throughout Fort Meade and the surrounding area road. The traffic data collected included Intersection Turning Movement Counts, Average Daily Traffic Volume Counts, Vehicular Classification Studies, and Travel Speed Studies.

Traffic conditions are typically evaluated using capacity and Level of Service (LOS) as a method of evaluation. The Highway Capacity Manual (HCM) Special Report 209, 3rd Edition, published by the Transportation Research Board in 1998, addresses capacity and LOS as its two principal concepts. The capacity of a facility is defined as “the maximum hourly rate at which persons or vehicles can reasonably be expected to traverse a point or uniform section of a lane or roadway during a given time period under prevailing roadway, traffic, and control conditions.”

Level of Service (LOS) uses qualitative measures that characterize operational conditions within a traffic stream and their perception by motorists and passengers. The descriptions of individual “levels of service” characterize these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations, from A to F, with LOS-A representing the best operating conditions and LOS-F the worst. Each level of service represents a range of operating conditions. The volume of traffic that can be served under the stop-and-go conditions of LOS-F is generally accepted as being lower than that possible at LOS-E; consequently, LOS-E is the value that corresponds to the maximum flow rate, or capacity, of the facility. For most analysis purposes, LOS-D is usually considered to be the lowest level of service considered acceptable to the facility users.

The Maryland State Highway Administration (SHA) as well as Anne Arundel County use LOS-D as their criterion for determining adequacy of transportation facilities. Furthermore, in more urban and suburban areas, the adequacy of transportation facilities is typically dictated by the operation of major intersections. For this purpose, Capacity Analyses are conducted for intersections using the Critical Lane Volume (CLV) methodology, which is a planning methodology accepted by many jurisdictions throughout the region. The CLV procedure develops a Critical Lane Volume on the basis of the sum of hourly volumes coinciding at an intersection, considering the various turning movements and travel lanes available. Table 3-5 details the various LOS for intersections and the corresponding Critical Lane Volumes.

The CLV methodology is a planning procedure that provides valuable insight to operating conditions of critical intersections. However, the HCM also provides a detailed analysis

procedure for determining LOS for signal-controlled intersections. This is an operational procedure that considers all the geometric characteristics and other factors affecting traffic operations including signal timing and phasing. The HCM procedure identifies LOS in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time.

Table 3-5. Level of Service for Traffic Analysis/Critical Lane Volumes

LOS Rating	Definition	Lane Loading of Vehicles	
		Min	Max
LOS-A	Free flowing traffic. Individual vehicles are virtually unaffected by the presence of others in the traffic stream. Freedom to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to motorist, passenger, or pedestrian is excellent.	0	1000
LOS-B	Relatively stable flow of traffic, but the presence of others in the stream of traffic begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS-A. The level of comfort and convenience is somewhat less than at LOS-A, because the presence of others begins to affect individual behavior.	1001	1150
LOS-C	Traffic is in the range of stable flow, but marks the beginning of conditions where individual drivers become significantly affected by others in the traffic stream. Speed and maneuverability are affected by the presence of other vehicles and substantial vigilance is required on the part of drivers. The general level of comfort and convenience declines noticeably at this level.	1151	1300
LOS-D	Represents high density traffic, but stable flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will often cause operational problems at this level.	1301	1450
LOS-E	Represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform, rate. Freedom to maneuver within the traffic stream is extremely difficult, it is frequently accomplished by forcing other vehicles or pedestrians to “give way” to accommodate such maneuvers. Comfort and convenience levels are extremely poor and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause stopping and delays.	1451	1600
LOS-F	This condition is forced flow or stop-and-go traffic that creates a “breakdown” situation. It exists wherever the rate of traffic flow exceeds the capacity of a section of roadway to accommodate the flow past a given point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclic fashion. It should be noted, however, that in many cases operating conditions of vehicles or pedestrians discharged from the queue may be quite good. Nevertheless, because it is the point at which arrival flow exceeds discharge flow that queues forms, LOS-F is an appropriate designation for such points.	1601	1602+

For purposes of the 1999-2000 traffic study, all the critical intersections on Fort Meade were first evaluated using the CLV methodology, and then more detailed analyses were conducted using the HCM methodology for critical signal-controlled intersections.

In order to conduct the evaluation of existing conditions at the identified key intersections, intersection turning movement counts were conducted at each of the intersections. These counts were conducted between the hours of 7-9 AM and 4-6 PM on a weekday to identify existing traffic volumes. The Critical Lane Volumes measured during weekday traffic at MD Route 175 and Reece Road, the intersection nearest the proposed facility, were 787 vehicles during morning peak hours and 938 vehicles during evening peak hours. The LOS rating for both CLVs was LOS-A. Table 3-6 identifies the resulting existing peak hour traffic volumes and corresponding LOS at the identified key on-post and off-post intersections.

Table 3-6. Results of Intersection Capacity Analysis Conducted During Recent NEPA Assessment

Intersection	Critical Lane Volume		Highway Capacity Manual	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
MD Route 175 & Rockenbach Rd.	D / 1305	C / 1261	C / 29	C / 27
MD Route 175 & Reece Rd.	A / 787	A / 938	C / 23	C / 23
MD Route 175 & Mapes Rd.	A / 748	B / 1069	B / 19	C / 20
MD Route 175 & Llewellyn Ave.	A / 936	A / 899	C / 27	C / 25
Mapes Rd. & Cooper Ave.	A / 646	A / 717	B / 13	B / 10
Mapes Rd. & Taylor Ave.	A / 524	A / 715	A / 7	B / 10
MD Route 32 & Mapes Rd.	E / 1474	A / 887	C / 21	B / 17
MD Route 32 & MD Route 198	C / 1240	E / 1594	B / 16	D / 42
MD Route 32 & Emory Rd.	F / 1733	E / 1452	C / 21	C / 22

The study determined that under normal traffic conditions the multi-lane section of MD Route 175 from Reece Road to east of Mapes Road would operate at good LOS-A or LOS-B conditions during both the weekday morning and evening peak hours. MD Route 175 and Reece Road operate well at a LOS-A at peak hours.

3.12.3.4 Railways

Two Maryland Rail Commuter (MARC) railroad lines serve the Fort Meade area, providing access to Baltimore, Maryland, and Washington D.C. The western line follows the northwest

border of Anne Arundel County. The closest station on this line is in Jessup, approximately 1.5 miles west of the base. The eastern line runs through Odenton, 1.5 miles east of Fort Meade.

3.12.3.5 Aviation

Three major commercial airports, one military airfield, and four small airfields are near Fort Meade. The commercial airports are in Anne Arundel County (BWI); Alexandria, Virginia (Ronald Reagan National Airport); and Loudoun County, Virginia (Washington-Dulles International Airport). Andrews Air Force Base in Prince George's County, Maryland, provides air cargo and military transportation. Three of the small airfields are located in southern Anne Arundel County and one is located in western Prince George's County.

Tipton Army Airfield, located in the southwest section of Fort Meade, formerly served the military units stationed at Fort Meade. As recommended by BRAC 95, Tipton Army Airfield was closed in September 1995. The property was transferred to Anne Arundel County, who operate Tipton as a general aviation airport.

3.12.3.6 Public Transportation

Certain parts of Anne Arundel County are served by bus transit. Maryland Mass Transit Administration (MTA) buses serve the northern part of the county, including a route to Annapolis along MD Route 2. The MTA contracts with private operators to run a commuter bus service with limited schedules between Annapolis and Washington D.C. Currently, MTA offers bus service to Fort Meade via bus No. 240.

3.13 SOCIOECONOMIC CONDITIONS

3.13.1 Region of Influence

Fort Meade is located in the northwestern corner of Anne Arundel County and less than two miles from the Howard County border. Anne Arundel and Howard Counties are located in the Baltimore Primary Metropolitan Statistical Area (PMSA). The region of influence (ROI) describes the area potentially subject to direct demographic and economic impacts. The ROI is determined by identifying the counties that will likely: (1) provide the construction workers and operational personnel. Based on these criteria, the ROI for the Proposed Action consists of Anne

Arundel and Howard Counties. The City of Annapolis is both the state capitol of Maryland and the Anne Arundel county seat. The Howard County seat is Ellicott City.

3.13.2 Demographics

According to Fort Meade's Directorate of Resource Management (DRM), a total of 9,925 military personnel are assigned to Fort Meade with 5,849 family members residing on post (Fort Meade DRM 2000). There are a large number of persons who work at Fort Meade (both military personnel assigned to the installation and civilians), but reside in the surrounding communities and commute to the installation each day. The installation population includes (1) military personnel assigned to Fort Meade, (2) the dependents of the military personnel living on the installation, (3) civilians working at Fort Meade, and (4) volunteers. The total installation population is 50,075 persons (Fort Meade DRM 2000). The installation population represents the total number of persons who are on the installation on a daily basis between Monday and Friday during normal working hours. The civilian workers include 2,281 DA civilian employees and an estimated 21,875 NSA civilian employees. The remaining civilian workers consist of non-appropriated employees, AAFES, contractors, and others. There are 2,103 volunteers who work on the installation.

Fort Meade also supports a large number of additional persons who reside off the post in the adjacent communities and who come onto the post periodically to use the recreational facilities or to shop at the Base Exchange. The off-post population totals 167,742 persons, (residing within 50 miles) and consists of 55,536 retirees, 111,072 family members of retirees, 803 off-post family members and 1,134 assigned military personnel and their dependents living off the post. The total population supported by Fort Meade, including on-post and off-post populations in 2000 was 218,620 persons (Fort Meade DRM 2000).

According to the 2000 Census of Population and Housing, the population of Anne Arundel County was 489,656 persons, while Howard County's population was approximately half that, at 247,842 persons for a total population of 737,498 in the ROI. Fort Meade comprised all of census tract 7406 in Anne Arundel County (USCD 2002, Howard County 2001c).

Table 3-7 shows the historic and forecast population trends in the ROI. Anne Arundel's population grew steadily between 1970 and 1990, increasing by 44 percent, while population more than tripled in Howard County over that same period. Populations in both counties have continued to soar, having increased 32 percent by 2000 in Howard County and nearly 15 percent in Anne Arundel County. The high population growth between 1970 and 1990 in the ROI resulted from strong economic growth and the rapid suburbanization along the Interstate 95 corridor between Baltimore and Washington D.C. The economic and population growth rates in both counties have slowed somewhat since 1990 as the amount of remaining, developable land has declined. Strong economic growth pressures, however, are still present.

The Maryland Office of Planning's population projects the population of Anne Arundel County to reach 533,400 persons by 2020 (see Table 3-7). The annual population growth rate will be lower than occurred between 1970 and 1990, averaging about 0.5 percent between 2000 and 2020. The population of Howard County is projected to grow at an average annual rate of 0.99 percent through 2020, reaching a total of 303,450 persons.

Table 3-7. Historic Population Trends and Forecasts for Fort Meade Region

Year	Total Population	
	Anne Arundel County	Howard County
1970	298,042	61,911
1980	370,775	118,572
1990	427,239	187,328
1995	459,400	218,030
2000	489,656	248,950
2005	504,100	279,250
2010	521,500	297,950
2015	529,300	304,850
2020	533,400	303,450

Source: Howard County Web Site, Demographic and Socio-Economic Outlook, Projection Page <http://www.op.state.md.us/MSDC/County/howaproj.htm>
Source: Anne Arundel Major Statistics, 1960-2030, Anne Arundel Department of Planning and Code Enforcement.

The Anne Arundel County Planning Department has projected population growth in census tract 7406 through the year 2020. This projection assumes that the mission of Fort Meade would remain the same as at present. Owing to demographic factors such as declining household size,

this means that the number of military personnel and their dependents who are stationed at Fort Meade would likely decrease.

Table 3-8 contains population demographic characteristics for the two counties. The average household size in the two counties in 2000 was very similar, while a slightly higher proportion of Anne Arundel County's population 16 years or older was in the labor force. Both counties had more than 70 percent of their population 16 years and older in the labor force in 2000 (Maryland 2000, Anne Arundel County 2001b).

Table 3-8. Population Characteristics in the Counties Surrounding Fort Meade

	Anne Arundel County	Howard County
Selected Age Groups in 2000:		
0 to 4 years	31,944	17,690
5 to 19 years	87,051	53,740
20 to 44 years	198,204	98,600
45 to 64 years	120,810	61,890
65+ years	<u>47,791</u>	<u>17,030</u>
Total 2000 Population	485,800	248,950
Households in 2000:		
Total Households	176,045	90,925
Average Household Size	2.657	2.71
Labor Force in 2000:		
Total Population 16+years	333,410	188,750
Number in Labor Force	243,143	149,280
Percent in Labor Force	80.39	79.1
Source: Maryland Department of Planning, Howard County Web Site, Demographic and Socio-Economic Outlook, Projection Page. http://www.op.state.md.us/MSDC/County/howaproj.htm . Source: Anne Arundel Major Statistics, 1960-2030, Anne Arundel Department of Planning and Code Enforcement.		

3.13.2.1 On-Post Housing

Fort Meade recently privatized all its on post housing as part of a program referred to as the Residential Communities Initiative (RCI). In May 2002, 2,500 Fort Meade family homes were privatized as part of the RCI process. The residual 112 family homes in the Historic District were privatized in April 2003. The original RCI proposal endeavored to build out a deficit of 308 homes; maintain 424 homes (including 112 historic homes, 262 recently constructed homes, and 50 homes in good condition); rebuild 250 homes previously condemned and therefore not

transferred; and demolish 2,438 homes and re-build new homes in their place, for a total of 3,170 homes. Per the RCI plan to date, 535 new homes have been built and are being maintained, and 158 homes have been demolished, for a total of 2,989 homes (Faux 2005).

Family housing for active duty service members are in the following areas: Argonne Hills, Meade Heights, Geraghty Village, MacArthur Manor, and Shea Court. These family housing areas include 23 five-bedroom units, 581 four-bedroom units, 1,518 three-bedroom units, and 703 two-bedroom units. Currently there are 399 officers of different ranks at Fort Meade with new homes, and about 2,825 other officers who are designated for houses (Faux 2005).

3.13.2.2 Off-Post Housing

Some military personnel and their dependents assigned to Fort Meade live off the post and have to obtain housing through the private housing market. The Family Housing Office assists active personnel in obtaining housing off post. A recent survey indicates that off-post rental housing begins around \$650 a month plus utilities (Fort Meade 2001).

Anne Arundel County had 186,937 housing units in 2000 and with a vacancy rate of 4.4 percent. (USCB 2002). The total housing stock in Anne Arundel County contains the following proportions of units: 65 percent single family; 17 percent townhouses; and 15 percent multi-family. A total of 3,078 new housing units were authorized for construction in the County in 2000 (Anne Arundel County 2001b,c).

Howard County contained 92,818 housing units and had a vacancy rate of 5.6 percent according to the 2000 Census. According to Census data, 20,235 new housing units were built in Howard County between 1990 and 2000, an average of about 2,000 new units per year, where most of the units are owner-occupied. The number of vacant units has decreased significantly over the decade, from 5.8 percent to 3.0 percent. This is due, in part, to the large construction boom at the end of the 1980s where about 4000 new units per year were being built (Howard County 2001c).

3.13.3 Economics

Table 3-9 presents trends in place of work employment by 1-digit SIC code for Anne Arundel and Howard Counties for the years 1970 and 1997. This table shows changes in the size and

structure of the ROI's economy that have occurred over the last 27 years. Total employment in the ROI increased by 256,941 jobs over this period, including increases of 139,336 and 117,605 jobs in Anne Arundel and Howard Counties, respectively. These numerical increases translate into average annual employment growth rates of 2.7 percent and 7.0 percent over this time period. The difference between the employment and population growth rates reflects the fact that economic development has occurred in the ROI over the last 27 years as jobs were transferred from Baltimore and Washington D.C. to the suburbs (i.e., the jobs have followed the people, a trend which has continued into 2000). Both counties are located in the densely developed Interstate 95 corridor that connects Washington DC and Baltimore; this corridor has undergone rapid economic development since 1980. The largest employment growth rates in Anne Arundel County occurred in the wholesale trade, agricultural services, and services sectors. Similarly, the largest employment growth rates in Howard County were in the mining (sand and gravel and construction aggregates), wholesale trade, and transportation/ communication/utility sectors.

Table 3-9. Employment Trends for 1970 and 1997 in the Fort Meade Region of Influence

Employment by Sector	1970				1997			
	Anne Arundel Co.		Howard Co.		Anne Arundel Co.		Howard Co.	
	Number	%	Number	%	Number	%	Number	%
Farm	927	0.7%	727	3.2%	533	0.2%	655	0.5%
Ag Services, Forestry	535	0.4%	326	1.5%	2,839	1.1%	1,839	1.3%
Mining	70	0.1%	6	0.0%	122	0.1%	122	0.1%
Construction	5,720	4.4%	2,285	10.2%	16,375	6.1%	9,875	7.1%
Manufacturing	16,127	12.4%	4,291	19.2%	16,211	6.0%	7,035	5.0%
T.C.U.*	4,449	3.4%	693	3.1%	14,735	5.5%	7,709	5.5%
Wholesale Trade	1,376	1.1%	786	3.5%	9,758	3.6%	11,301	8.1%
Retail Trade	17,497	13.5%	2,603	11.6%	46,287	17.2%	24,358	17.4%
F.I.R.E.**	4,488	3.5%	1,825	8.1%	17,092	6.3%	12,974	9.3%
Services	15,725	12.1%	4,933	22.0%	72,827	27.0%	50,114	35.8%
Government	63,103	48.5%	3,931	17.5%	72,154	26.9%	14,029	10.0%
Total Employment	130,017	100.0%	22,406	100.0%	269,353	100.0%	140,011	100.0%

Source: U.S. Department of Commerce, Bureau of Economic Analysis. 1998. Regional Economic Information System. Washington, D.C.
 * T.C.U. = Transportation, Communications, and Utilities.
 ** F.I.R.E. = Finance, Insurance, and Real Estate.

Note: 1997 information was taken from BEA Data, however, there appears to be an error in the calculation of mining employment.

The total civilian labor force in the ROI in 2000 was 409,276 persons. The labor force was 259,996 persons in Anne Arundel County and 149,280 persons in Howard County. The civilian labor force consists of residents 16 years and older who are either currently employed, regardless of where they work, or are actively seeking work. The labor force estimate for Anne Arundel County does not include the permanent military personnel assigned to Fort Meade, but does include the spouses of the Fort Meade military personnel. Consistent with the trends in place of work employment, the labor force in the ROI has also grown rapidly in recent years as more of its residents have entered the labor force to capture the jobs that have come there. The number of employed persons residing in the ROI in 2000 was 381,252, including 246,958 in Anne Arundel County and 134,294 in Howard County. Recent unemployment rates in Anne Arundel and Howard Counties in 2000 were 3.0 percent and 2.1 percent respectively. (Anne Arundel County 2001b, Howard County 2001c).

Fort Meade generates a major, direct economic impact on the ROI annually, through the payroll of the persons employed there, and through its annual expenditures for goods and services. The total 2000 annual payroll of military and civilian persons employed at Fort Meade is estimated at approximately \$1.96 billion. Additional annual payments totaling \$0.63 million are made to retirees and annuitants. With the exception of \$28 million of estimated utility purchases, the total annual direct economic spending generated by the installation amounts to almost \$2.62 billion (Fort Meade DRM 2000).

3.13.4 Schools, Libraries, and Recreation Facilities

3.13.4.1 Schools and Libraries

Public school enrollments are increasing in both counties. Total enrollments in Anne Arundel County grew by more than 17 percent 64,339 in 1990 to 75,366 in 2000 (Anne Arundel 2001). Enrollments in Howard County schools grew by nearly 48 percent, from 29,863 in 1990 to 44,150 in 2000 (Maryland 2000).

There are seven public schools located on Fort Meade attended primarily by children living on the installation, although some students living off the post also attend these schools. The four elementary schools on Fort Meade, all with grades kindergarten through five, have a total

enrollment of 1,961 students (2000-2001 school year). These schools are: Pershing Hill Elementary School with an enrollment of 395, Manor View with 585 students, Meade Heights with 626 students, and West Meade with 355 students. The new Meade Heights Elementary School opened in September 1997. Two middle schools, grades 6 through 8, are also located on Fort Meade: MacArthur Middle with an enrollment of 1,050 and Meade Middle School with an enrollment of 833. The Meade Middle School is located adjacent to Meade High School and opened in September 1998. Meade Senior High School had an enrollment of 1900 in 2001. These schools are owned and operated by the Anne Arundel County Board of Education, on land leased from Fort Meade (Fort Meade POA 2001).

Children of military personnel housed on and off post attend these schools. The off-post students who eventually attend the two middle schools, or Meade Senior High, include those who first attend the Brock Ridge, Harman, Jessup, Maryland City, and Van Bokkelen elementary schools located off the post. Children with special educational needs attend schools off post. Adult continuing education programs are also provided through the Army Education Center located in Building 8452. Graduate Equivalency Diploma testing is also available on and off post. A basic skills program provides educational assistance in the areas of math, English, and reading for those who are not high school graduates and require refresher work. Undergraduate and graduate level programs are available on and off post.

Other educational and related facilities near Fort Meade include Glen Burnie Academy, Arthur Slade Middle School, Martin Spaulding High School, and several private day-care facilities. Childcare services are available through the Child Development Services, consisting of two 303 capacity centers offering full-day developmental care and hourly care for children ages 6 weeks to 12 years old. Services include full-day and up to 11.5 hours per day and hourly care for children attending on an intermittent basis, up to 25 hours per week (Fort Meade 2001b). Additional childcare facilities are desperately needed on post to accommodate the ever-increasing demand for these services.

Colleges and universities within about 15 miles of the installation, include Anne Arundel Community College in Arnold, Howard Community College in Columbia, Bowie State College

in Bowie, the University of Maryland in College Park, and the U.S. Naval Academy and Saint John's College in Annapolis.

The installation library (the Medal of Honor Library) is housed in Building 4418 on Llewellyn Avenue. Other libraries near Fort Meade include the Provinces, Odenton, and Maryland City branches of the Anne Arundel County Public Library; the Laurel-Stanley Memorial Branch of the Prince George's County; and the Savage Branch of the Howard County Public Library.

3.13.4.2 Recreation Facilities

Fort Meade has a number of indoor and outdoor recreational and cultural facilities, including swimming pools, golf courses, a bowling center, and service members clubs. Recreational facilities include the Fort Meade Museum, Burba Park, Gaffney Sports Arena, Murphy Field House, Mullins Stadium Track, indoor and outdoor swimming pools, a golf complex, tennis courts, a bowling center, a riding stable, an arts and crafts center, and an installation theater. The Fort George G. Meade U.S. Army Museum was established in 1963 as the First U.S. Army Museum. It is located on Leonard Wood Avenue, immediately off Mapes Road, which runs through the main gates of Fort Meade.

Indoor and outdoor facilities supporting active recreation are located throughout Fort Meade. Burba Park is located between Roberts and Llewellyn Avenues and Wilson Street, and contains picnic facilities, a playground, and a lake. Gaffney Sports Arena, located on Broadfoot Road, has three basketball courts, two squash courts, three racquetball courts, a sauna room, weight room, workout rooms, a 23-station Nautilus center, a 25-meter swimming pool, and separate locker room facilities for 150 men and 350 women. Murphy Field House offers indoor physical training equipment as well as intramural sports activities. The three outdoor swimming pools on Fort Meade are open from Memorial Day to Labor Day. The Fort Meade Golf Complex consists of two 18-hole golf courses: Applewood and Floyd L. Parks. Finally, 17 tennis courts are located throughout the installation.

Anne Arundel County offers a variety of private and public recreational facilities. In 1982, approximately 7,518 acres in the county were devoted to parks and recreational facilities. This area includes state and county parks, community and school recreation areas, and private

facilities. The Anne Arundel County Department of Recreation and Parks manages or owns 92 recreational facilities that encompass 4,198 acres. These facilities include athletic fields, hiking and biking trails, picnic areas, beaches, and historic sites.

3.13.5 Public Health and Safety

As Fort Meade has transitioned into an administrative center for DoD, no known munitions storage or training activities which could pose a threat to public safety are presently conducted on post. However, because of the events of September 11, 2001, Fort Meade is no longer an open installation. The installation is now a gated facility, and increased security measures have been implemented as per DoD directives to restrict access and limit travel on post. All access to the installation is now restricted to U.S. military personnel and sponsored civilians only. The duration of these access restrictions as well as other anti-terrorism measures is unknown.

Potential threats to public health and safety related to storage, use and disposal of hazardous materials as they exist on post have been addressed in accordance with state and Federal law and Army regulations. Fort Meade has prepared an *Installation Spill Contingency Plan (ISCP)* (USACE 1998a) and *Spill Prevention Control Countermeasures Plan (SPCC)* (USACE 1998b). The ISCP is updated at least every 3 years, or when significant changes are made in the SPCC. The SPCC plan is updated every 3 years, or when there is a significant change in operations that could increase the likelihood or impact of a spill (USACE 1998b). Updated SPCC and ISCP plans are scheduled for completion in 2002. Fort Meade has also prepared an *Installation Hazardous Waste Management Plan* (USACHPPM-North 2001). Personnel employed at Fort Meade who manage or handle hazardous materials or wastes are trained in accordance with federal, state, local, and Army requirements. Each facility has an appointed emergency management coordinator, who is responsible for coordinating an emergency response until relieved by hazardous materials spill response personnel.

While no installation-wide evacuation plan exists, the ISCP provides emergency response instructions for spills and uncontrolled releases of hazardous materials at each of the facilities that store hazardous materials. The instructions include notification, probable spill routes, control measures, exposure limits and danger levels for each material, and evacuation guidelines.

Some of the evacuation instructions could also apply to residents located adjacent to the installation. Material Safety Data Sheets, which include information about health hazards and first-aid measures, are maintained along with the appropriate ISCP sections in each facility.

3.13.5.1 Police Services

The Emergency Services Center, building 6619, accommodates the Provost Marshal Operation (PMO), and has approximately 84 staff. The center is located between Taylor Ave. and York Rd., south of Mapes Rd. County and state police provide service to the areas surrounding Fort Meade. The nearest county police station is on the east side of the installation on Annapolis Road, near the Odenton Shopping Center. Eighty-eight officers are assigned to the station and they respond to approximately one-third of the calls for assistance in the Severn-Odenton area. The Military Police at Fort Meade do not have formal agreements for assistance with either the county or the Maryland State Police and they have limited contact with those police jurisdictions.

3.13.5.2 Fire Protection and Prevention Division

The Emergency Services Center, located in Building P-6619, south of Mapes Rd. between York and Taylor Ave., also accommodates the Fire Protection and Prevention Division of DPW. The Fire Protection and Prevention Division resulted from combining the fire station originally located at Rock Avenue and the fire station located at the Tipton Army Airfield; it currently has a staff of 42 people, including 2 chiefs and 3 inspectors.

3.13.5.3 Medical Facilities

Kimbrough Ambulatory Care Center, formerly the Kimbrough Army Community Hospital, provides outpatient services only. Several other hospitals and numerous medical centers are near Fort Meade. Patients from Fort Meade are transported, as necessary, to other military facilities or to nearby civilian facilities, where services can be provided to military personnel under the Civilian Health and Medical Program of the Uniformed Services.

Nearby civilian emergency facilities are located at North Arundel Hospital in Glen Burnie (about 6 miles east of Fort Meade), Laurel Regional Hospital in Prince George's County (6 miles west), and Anne Arundel Medical Center in Annapolis (12 miles southeast). The closest military

hospitals are the Walter Reed Army Hospital in northwest Washington, D.C. (about 30 miles from Fort Meade), and the National Naval Medical Center in Bethesda (24 miles).

3.13.5.4 Family Support Services

Numerous family support services are available to the residents of Fort Meade and Anne Arundel County. Federal, state, and local public service programs offer many services, including family counseling, financial assistance, employment referrals, and emergency relief. Family support services are also available through the local school system, religious and civic organizations, and community volunteer programs.

3.13.6 Noise

Noise can be annoying or disruptive to normal activities for people and wildlife. In extreme cases, it can have adverse health effects, such as hearing loss. Recognizing that its activities and equipment can generate potentially annoying noise levels, the U.S. Army has an Army-wide noise impact management program. The purpose of this program is to minimize the potential for annoying the Army's neighbors.

The pattern (location, duration, timing and frequency) of activities at an Army installation rise to an associated pattern of noise. The loudness is measured in units called decibels (dB). The loudness of sound as heard by the human ear is measured on the A-weighted decibel (dBA) scale. Examples can be found in Table 3-10.

Because most noise generated is intermittent, the calculations of noise levels are averaged over a 24-hour period. The "sound exposure events," the calculations of the total sound exposure for a single event expressed in one second of time, are totaled and averaged. This averaging of sound exposure events results in the Day-Night Level (DNL) noise average. These DNLs are weighted more heavily toward nighttime noise compared to daytime noise, because noise at night is more annoying. When DNLs are calculated for each location they produce noise contour maps. Just as a topographic map shows land elevations, a noise contour map shows areas of elevated noise levels. The higher the noise level, the more likely citizens exposed to that level would be annoyed. The noise zones and the associated annoyance level are shown in Table 3-11.

Table 3-10. Common Noise Levels

Source	Decibel Level	Exposure Concern
Soft Whisper	30	Normal safe levels.
Quiet Office	40	
Average Home	50	
Conversational Speech	66	
Busy Traffic	75	May affect hearing in some individuals depending on sensitivity, exposure length, etc.
Noisy Restaurant	80	
Average Factory	80-90	
Pneumatic Drill	100	Continued exposure to noise over 90 dB may eventually cause hearing impairment
Automobile Horn	120	
Jet Plane	140	Noises at or over 140 dB may cause injury
Gunshot Blast	140	

Source: EPA Pamphlet, "Noise and Your Hearing," 1986.

Table 3-11. Department of Army Noise Zones

Noise Zone	Percentage of Population Likely to be Annoyed	Day-Night Level	Acceptability*
I	<15%	<65 dBA	Acceptable
II	15-39%	65-75 dBA	Normally Unacceptable
III	>39%	>75 dBA	Unacceptable

* Acceptability recognized as per Department of Housing and Urban Development (HUD) standards pertaining to noise sensitive land uses such as housing, schools, etc.
 Adapted from Source: Canter, L.W., Environmental Impact Assessment, second edition 1996, p. 313 and p. 318.

The main source of noise at Fort Meade and the surrounding area is vehicular traffic. Typical equivalent sound levels (Leq) associated with traffic range between 50 and 55 decibels. Other sources of noise on the post include normal operation of the heating, ventilation, and air conditioning systems; lawn maintenance; snow removal; and general maintenance of the streets and sidewalks. None of these operations or activities produces excessive levels of noise, nor have they generated any complaints about noise.

3.13.7 Aesthetics and Visual Zones

The Fort Meade Installation Design Guide identifies specific visual zones on the installation, designated by location, character, assets, and liabilities.

3.14 ENVIRONMENTAL JUSTICE

On February 11, 1994, President Clinton issued Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. This Executive Order is designed to focus the attention of federal agencies on the human health and environmental conditions in minority communities and low-income communities. It requires federal agencies to adopt strategies to address environmental justice concerns within the context of agency operations. In an accompanying Presidential memorandum, the President emphasizes that existing laws, including NEPA, provide opportunities for federal agencies to address environmental hazards in minority communities and low-income communities. In April of 1995, the EPA released the document titled *Environmental Justice Strategy: Executive Order 12898*. The document established Agency-wide goals and defined the approaches by which EPA will ensure that disproportionately high and adverse human health or environmental effects on minority communities and low-income communities are identified and addressed. There are no minority or low income populations on the post that would require consideration under this executive mandate.

Also within the context of the NEPA process, effects of the action on children should be reviewed under environmental justice. Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks, directs federal agencies to ensure that their policies, programs, activities, and standards address disproportionate risks to children that result from environmental health or safety risks.

4.0 ENVIRONMENTAL CONSEQUENCES

This chapter describes the potential environmental effects, both adverse and beneficial, of the Proposed Action and its action alternative as described in Chapter 2. Mitigation measures are described if applicable and appropriate.

The baseline established to evaluate the environmental and socioeconomic effects of the Proposed Action and its action alternative are the conditions at Fort Meade and adjacent areas in 2005, as described in Chapter 3. Unless otherwise described in this chapter, the No-Action Alternative (not implementing the proposed construction outlined in the Proposed Action or the action alternative) would not result in any change to this baseline.

4.1 LAND USE

4.1.1 On-Post Land Use

A long-range planning analysis recently conducted at Fort Meade examined the following critical land use planning elements: (1) existing land use patterns, (2) future facility requirements, and (3) governmental regulations. The availability of land at Fort Meade for future development, and its location relative to existing post facilities, is the primary consideration for siting new projects. The land use plan developed for Fort Meade by the master planning office would retain the current overall land use pattern, while certain areas would change to compatible uses. Facilities required for future growth or mission changes, as well as replacements for inadequate or obsolete facilities, would be sited within appropriate land use areas. Land uses planned for Fort Meade are described in the Real Property Master Plan, Long Range Component for Fort Meade (Fort Meade 1999a). These planned land uses would produce a more cohesive pattern of land use on the installation by consolidating areas of compatible activities.

The most significant changes in future land use are expected to occur in the northern and central administrative areas (also referred to as the Transitional Zone). Under the phased development strategy planned for Fort Meade, this area would supply more than 300 acres for the replacement of existing WWII structures and expansion for new tenant activities.

4.1.1.1 Proposed Action

The Proposed Action would construct a new 70th Intelligence Wing facility between Love Road and 3rd Cavalry Road at NSA. An open-paved parking lot with 269 spaces would be constructed on an existing playing field immediately north of Newjohn Road, near 3rd Cavalry Road. The construction of the Proposed Action in this location is compatible with Fort Meade's land use planning (Figure 3-2). No adverse impacts to on-post land use would be expected from the Proposed Action.

4.1.1.2 Action Alternative

Under the action alternative, a new 70th Intelligence Wing facility of the same size and characteristics described for the Proposed Action would be constructed, but at a different (adjacent) site. The action alternative site is located immediately north of Newjohn Road, near 3rd Cavalry Road at the site of an existing playing field. The existing paved parking area on the site of the Proposed Action would be used for parking for the new facility. Two small buildings, including one outdoor restroom and a storage shed, would have to be removed prior to construction of the Action Alternative. The construction of the 70th Intelligence Wing in this location is compatible with Fort Meade's Land Use Planning (see Figure 3-2). No adverse impacts to on-post land use would be expected from the action alternative.

4.1.2 Regional Land Use and Zoning

The proposed and action alternative project sites are located well within the installation and near either base housing or community-related facilities. Constructing a new community-related building on any of these sites would not affect off-post land use. Therefore, no impacts to regional land use would result from the Proposed Action or its action alternative.

4.1.3 Geology

Site assessments were conducted during the development of construction plans for the 70th Intelligence Wing project. Based on the site assessments, project construction for the Proposed Action and its action alternative need only follow appropriate construction procedures, in accordance with state and local regulations, to ensure that there would be no effects on site geology. No impacts are anticipated from the Proposed Action or its action alternative.

4.1.4 Soils

Prior to design and construction, appropriate subsurface investigations will be completed at the project site and approved sediment and erosion control plans will be followed to reduce the potential for erosion. Some soils mixing, compaction, and removal is to be expected during construction activities. To the extent possible, soil disturbance will be limited to the immediate building footprint and associated parking areas. It should be noted that both the Proposed Action site and the action alternative site are already within a group of highly disturbed soils mapped by the NRCS as Cut and Fill Land. Given these factors, neither the Proposed Action nor the action alternative are anticipated to have significant effects on soils.

4.1.5 Topography and Drainage

The ground surface slope at the Proposed Action and action alternative project sites are well within the regionally-acceptable ranges for construction activities. Grading would be minimal to prepare for construction at the sites for the Proposed Action and the action alternative. Very few trees would have to be cleared for either the Proposed Action or the action alternative. No significant impacts to area topography are expected.

4.2 AIR QUALITY

To assess the potential impacts to air quality under the Proposed Action, a quantitative assessment of emission-generating activities associated with the 70th Intelligence Wing facility was conducted. The primary sources of air emissions from the Proposed Action are (1) construction vehicle fuel combustion, (2) earth moving activities (fugitive dust), and (3) boiler fuel combustion. Important air pollutant emissions regulated by EPA and MDE include SO₂, particulate matter, CO, NO_x, VOC, and lead (Pb) emissions. VOC and NO_x are of particular importance because they contribute to the formation of ozone, and, as noted in the Affected Environment section of this EA, Fort Meade is located in a severe ozone nonattainment area (the Baltimore region).

4.2.1 Construction-Related Air Emissions

Construction activities generate short-term, temporary emissions that result in generally localized impacts on air quality. Such temporary emissions include exhaust emissions from heavy-duty

construction equipment/vehicles. Various types of construction equipment could be used at Fort Meade for clearing, grading, digging, hauling, etc. Exhaust emission factors for these various types of equipment can be found in the EPA publication *AP-42, Volume II* (EPA 1991). At the time of this EA, there is no specific estimate of equipment requirements for construction of the 70th Intelligence Wing project. Therefore, to estimate construction vehicle emissions, it was assumed that 10 pieces of equipment (two bulldozers, two loaders, two excavators, and four dump trucks) would operate continuously on site during the earth moving/grading phase of construction (10 days). In addition, it was assumed that two pieces of equipment (one forklift and one crane) would operate continuously on site during the building phase of construction (40 days). Emissions to the air from heavy-duty construction equipment/vehicles are assumed to cease once exterior building construction is complete. (The time period for exterior building construction will be significantly shorter than the time period for interior construction activities.)

Short-term, temporary emissions also include fugitive dust (particulate matter) emissions generated by construction equipment activities. The specific sources of fugitive dust emissions associated with construction are earth moving and dirt pile/loose soil wind erosion. These sources were assumed to be “active” during the earth moving/grading phase of construction. Emission factors for these fugitive dust-generating activities can be found in the EPA publication *AP-42, Volume I* (EPA 1991).

Based on these assumptions and emission factors, the estimated annual air emissions (tons per year, tpy) from construction activities are as follows:

- NO_x – 2.24 tpy,
- VOC – 0.14 tpy,
- CO – 0.92 tpy,
- SO₂ – 0.22 tpy,
- PM – 0.14 tpy, and
- Pb – <0.002 tpy.

Note that emission-generating activities (outdoor construction activities) are assumed to occur within the first half of the construction period. Therefore, for the 70th Intelligence Wing project, emission-generating activities would occur in the year 2005. It should be re-emphasized

that these temporary emissions would result in generally short-term, localized effects on air quality. No significant impact is expected.

4.2.2 Operations-Related Air Emissions

Once the completed 70th Intelligence Wing facility is occupied by Fort Meade personnel, emissions would be generated on continuous basis. The new 72,000-SF building will require heating and cooling systems for day-to-day operations; these systems would use natural gas for fuel. Estimation factors were developed for the 70th Intelligence Wing from emissions analysis found in the Final Environmental Impact Statement Future Development and Operations, Fort George G. Meade, Maryland (2001). Specifically, the ratio of the estimated natural gas use to building area for EIS projects was averaged to yield a factor that was multiplied by the building area of the 70th Intelligence Wing facility to estimate natural gas usage. Given this factor, the estimated annual gas usage at the 70th Intelligence Wing would amount to 3,960,000 cubic feet. The natural gas usage estimate was then multiplied by pollutant emission factors provided in *AP-42, Volume I* (revised) (EPA 1998) to yield emission estimates. Using this approach, NO_x emissions from the heating and cooling systems are estimated to be 0.28 tpy, and CO to be 0.14 tpy. All other pollutant emissions can be considered negligible (i.e., 0.14 tpy or less). Therefore, operations-related emissions from the 70th Intelligence Wing would make a minimal (less than 1 percent) contribution to the total annual air emissions at Fort Meade. This level of emissions is below the *de minimus* thresholds for EPA-regulated criteria pollutants and, therefore, would not require a formal General Conformity rule determination.

An MDE air quality permit (permit-to-construct, or PTC) is required for fuel-burning equipment, such as heating and air conditioning systems using natural gas with a rated capacity of greater than 1.0 MMBtu/hr (COMAR 26.11.02.10C). At this time, it is anticipated that the new boiler associated with the 70th Intelligence Wing facility would have a capacity of 2.0 MMBtu/hr., thus indicating the need for a State PTC.

After construction of the project is complete, air emissions would also be generated on a continuing basis by new employee commuter vehicles. Similar to boilers emissions, these mobile emissions can be classified as a “permanent” emissions increase resulting from the Proposed Action. Mobile sources constitute an important source category of air emissions, especially for

VOCs, CO, and NO_x emissions. Mobile source emissions of these pollutants are regulated by EPA under the Clean Air Act (CAA). However, because the current access restrictions on post have temporarily impacted normal traffic flows, and the duration of these travel restrictions is unknown, no definitive analysis can be conducted at this time for the air emissions generated now or in the future by additional construction and commuter vehicles.

Because of the non-attainment status of this region, Fort Meade has been working with state and local agencies to reduce overall mobile emissions on post and would be expected to continue to do so (Gebhardt 2001a). More discussion addressing traffic reduction strategies (thereby, contributing to air emissions reduction efforts) at Fort Meade is presented in section 4.12.8.

4.3 WATER RESOURCES

4.3.1 Surface Water

4.3.1.1 Proposed Action

In general, the potential effects on surface water quality associated with the Proposed Action would be limited to (1) construction activities and (2) continuing runoff from the new structure and parking area. Storm water runoff from construction areas typically carries excess sediments and sediment-bound metals and nutrients into receiving waters. Following construction, the grease and oil that accumulate on newly paved parking areas may result in periodic inputs of these substances into the local waterways. In addition, runoff may contribute to thermal pollution, because water flowing over warm asphalt will have a higher temperature than ambient surface water.

Construction under the Proposed Action of a 72,000-SF building with 90,000-SF of associated paved parking area would result in a total impervious surface area of approximately 162,000-SF (3.7 acres). Considering, however, that the new 72,000-SF building would be constructed on already impervious surface (i.e., existing parking lot), new impervious surface areas would be limited to only 90,000-SF (about 2 acres) for the new parking lot. This small amount of new impervious surface is likely negligible when considering the existing total on-post impervious surface area of more than 530 acres (Fort Meade 2001a).

Under the Proposed Action, all storm water management plans would be approved by the State of Maryland in accordance with COMAR 260901-260902. The Maryland Department of the Environment has renewed Fort Meade's storm water permit application, Case No. MD# 00SF0147. The new permit GP-00HT expires in 2005.

Maryland State regulations require that all jurisdictions implement a storm water management program (SWMP) to control the quality and quantity of storm water runoff that results from new development. The regulations require that the release rate from newly developed areas doesn't exceed the rate generated by the site prior to development. Currently, Fort Meade follows storm water management guidance outlined in the *Maryland Stormwater Design Manual* (MDE 1998a).

Fort Meade has addressed its storm water management issues. Although the storm water drainage system is generally considered adequate to meet existing demands, installation analysts have recommended that it be expanded with new storm water management ponds to control localized drainage problems. As of 1999, construction of these facilities, including 19 retention ponds to reduce concentrated flow in main branch channels, was essentially complete (Fort Meade 2001a). Potential expansion plans include new drainage catchments (curb, gutter, drains, inlets), possible new or enlarged storm sewers, and channel enhancement to Midway Branch and Franklin Branch.

The grading scheme for the construction of the 70th Intelligence Wing under the Proposed Action provides for storm drainage to exit into a nearby SWM pond which will be upgraded to accommodate any potential increases in runoff. All runoff from the new parking areas, as well as the roof runoff, would be directed to the pond. Similar to current storm water management now being implemented on post, the construction also would include a subdrainage system for all new asphalt pavement sections. The system would consist of perforated pipe within a gravel blanket enveloped in filter fabric that discharges to the storm drainage system and SWM pond. The project includes landscaping and perimeter tree plantings to shade pavement and reduce runoff temperatures, minimizing the potential for increasing ambient surface water temperatures. No significant impacts on surface waters are anticipated under the Proposed Action.

4.3.1.2 Action Alternative

The action alternative would construct the new 70th Intelligence Wing facility on a partially developed playing field with several small existing buildings and a parking area. The site has existing drainage culverts and established storm water conveyances. Newly paved areas would be expected to be similar in size to those planned under the Proposed Action. Construction plans have not yet been developed for the action alternative site, but it can be assumed that the plans would be similar if not identical to those of the Proposed Action with similar storm water drainage features to be installed as part of the construction effort. As Fort Meade is actively working to mitigate its storm water runoff post-wide, as well as on a project-by-project basis, no significant impacts to surface water would be anticipated under the action alternative.

4.3.2 Groundwater

4.3.2.1 Proposed Action and its Alternatives

It is not known if proposed construction of the 70th Intelligence Wing would require subsurface excavation (other than utility installation). It is assumed that minimal subsurface excavation is required for this project. If subsurface excavation is required, high water tables would be avoided. No impacts to groundwater from building construction are anticipated for either the Proposed Action or its action alternative.

The Proposed Action and the action alternative would only increase the existing personnel numbers by about 40; therefore, demands on the water supply would not increase significantly. According to recent studies, groundwater resources are sufficient to meet current potable water supply needs (Fort Meade 1998). No effects on groundwater supplies are expected.

4.4 AQUATIC RESOURCES AND WETLANDS

4.4.1 Aquatic Resources

4.4.1.1 Proposed Action

No permanent surface water features are located within or nearby the proposed project area. All appropriate sediment control methods would be employed during construction. Fort Meade is currently implementing measures such as riparian buffers and ‘no-mow’ zones in certain area on

post to minimize contaminant and sediment loadings into possible aquatic habitats. No significant impacts to aquatic resources are anticipated.

4.4.1.2 Action Alternative

The project area does not have a permanent surface water feature on or nearby the site. All appropriate sediment control methods would be employed during construction. No significant impacts to aquatic resources are anticipated.

4.4.2 Wetlands

4.4.2.1 Proposed Action

There are no mapped wetlands areas on or around the construction site considered under the Proposed Action (CH2Mhill 1999). No wetland areas were apparent on or near the site during the February 2005 site visit. Therefore, no impacts to wetlands are anticipated as the result of the Proposed Action.

4.4.2.2 Action Alternative

No mapped wetlands are on the site or in the vicinity of the area proposed for construction under the action alternative (CH2Mhill 1999). No wetland areas were apparent on or near the site during the February 2005 visit. Therefore, no impacts to wetlands would occur under the action alternative.

4.5 VEGETATION

Fort Meade voluntarily supports the Maryland Forest Conservation Act (FCA) and following the state forest Conservation Manual, has delineated and characterized existing forest resources on post. Specified forest conservation areas are to be maintained as undisturbed to the extent practicable. Figure 3-4 shows the designated Forest Conservation Areas on Fort Meade. Fort Meade complies with the FCA on a project-by-project basis. All outside contractors are required to follow the State Forest Conservation Manual in construction planning. Contractors are required to either maintain the necessary portion of property as forest, or to plan for the necessary mitigation.

4.5.1 Proposed Action

The project site considered under the Proposed Action is a large paved parking area. Existing trees and shrubs that surround the site are species commonly found within the region; none of the existing trees are of significant size. Any existing herbaceous vegetation on the site would be completely removed during construction of the 70th Intelligence Wing building. New vegetation would be planted around the new facility once construction is complete. Native shrub species would be planted in the vicinity of the building where possible, to provide greater habitat value. The resulting landscaping would produce a potentially positive visual impact for this area of Fort Meade.

4.5.2 Action Alternative

The parcel proposed for construction under the action alternative is primarily a previously disturbed playing field. Construction on the site would require the removal of the existing herbaceous vegetation and several areas of small trees, including Virginia pine, oak (red, white, and chestnut), and maple (silver and red). New vegetation would be planted around the new building once construction is complete. Native shrub species will be planted where possible, to provide greater habitat value. No significant impacts to forest resources would result from the action alternative.

4.6 WILDLIFE RESOURCES

4.6.1 Proposed Action

The site considered under the Proposed Action is an existing paved parking area with little existing habitat value. It is expected that the few birds and small mammals that may be found here would likely attempt to relocate to similar adjacent habitats. Therefore, no significant impacts to wildlife under the Proposed Action are expected.

4.6.2 Action Alternative

Under the action alternative, the new 70th Intelligence Wing facility would be constructed on a previously disturbed playing field. Any wildlife found here would likely attempt to relocate to similar adjacent habitats. Therefore, no significant impacts to wildlife under the action alternative are expected.

4.7 THREATENED AND ENDANGERED SPECIES

The Little Patuxent River may support one of only two populations of the glassy darter in Maryland. Listed as highly rare by the Maryland Natural Heritage Program, the species was relatively common in the Little Patuxent River immediately below the Fort Meade Dam at MD Route 198. In recent correspondence, Maryland DNR has expressed the need for special precautions to avoid impacts to this area, as even very infrequent impacts to installation streams could potentially cause damage to the glassy darter population in Maryland .

Although surface water runoff from the project would drain directly into the Little Patuxent River via an unnamed tributary, concern for stormwater water and runoff impacts to sensitive species has been incorporated into Fort Meade development plans (see Section 3.3.1). Fort Meade is currently planting trees and shrubs as riparian buffers to minimize runoff into streams (Fort Meade 2001). Implementing best management practices, such as rain gardens and retention ponds, near the source of runoff producing areas avoids or minimizes potential impacts to endangered species that exist outside of the immediate vicinity of any project.

Studies conducted at NSA in 2001 and 2002 by Versar, Inc. and at Fort Meade between March 2000 and November 2000 by Eco-Science Professionals, Inc. identified rare and endangered species habitats within installation boundaries (Versar 2003; Eco-Science Professionals 2001). None of these habitats exist within the areas designated for construction under either the Proposed Action or the action alternative, nor were threatened or endangered species (or evidence of their presence) observed during site reconnaissance. Recent correspondence with the U.S. Fish and Wildlife Service has also indicated that “no federally proposed or listed endangered or threatened species are known to exist within the project impact area” (Ratnaswamy 2005; Appendix A). Therefore, no impacts to threatened or endangered species areas are expected under the Proposed Action or the action alternative.

4.8 PRIME AND UNIQUE FARMLANDS

4.8.1 Proposed Action

Soils found on the site of the Proposed Action are designated in the Fort Meade Soil Survey (NRCS) as within the Cut and Fill Land Series; they are specifically mapped as Cut and Fill Land, 0 to 5 percent slopes, and are not considered prime farmland. No impacts to prime and unique farmlands would be expected under the Proposed Action.

4.8.2 Action Alternative

Soils on the alternative action site are also mapped by the NRCS as within the Cut and Fill Land Series; they are specifically mapped as Cut and Fill Land, 0 to 5 percent slopes, and are not considered prime farmland. As such, no impacts on prime farmland or unique farmlands are expected under the action alternative.

4.9 WILD AND SCENIC RIVERS

No Maryland rivers fall under the Federal Wild and Scenic Rivers designation. However, the Patuxent and Severn Rivers were formally designated under the Maryland Scenic and Wild Rivers Act as two of Maryland's Scenic Rivers. The Little Patuxent River and Severn Run are tributaries of these rivers, respectively. Fort Meade will review the site location for the Proposed Action or the action alternative and, if necessary, would follow guidelines set forth by the Patuxent and Severn River Commissions. No significant impacts to either of these rivers are anticipated.

4.10 CULTURAL RESOURCES

4.10.1 Archeological Resources

4.10.1.1 Proposed Action

Recent correspondence with the Maryland Historical Trust, Office of Preservation Services, indicates that construction on site of the Proposed Action would be unlikely to impact significant archeological properties and no archeological studies would be warranted prior to using this

location (Henry 2005, Appendix A). Therefore, no impacts to cultural resources are expected as the result of implementing the Proposed Action.

4.10.1.2 Action Alternative

Correspondence with the Maryland Historical Trust, Office of Preservation Services, indicates that construction on either of the alternative sites would be unlikely to impact significant archeological properties and no archeological studies would be warranted prior to using these locations (Henry 2005, Appendix A). Therefore, no impacts to cultural resources are expected as a result of implementing the action alternative.

4.10.2 Historic Architectural Resources

Neither the Proposed Action nor the action alternative would impact eligible historic architectural resources at Fort Meade (Henry 2005, Appendix A). The project sites for the Proposed Action and the action alternative are not in the vicinity of previously designated historical sites such as Building 8688, or those located in the Post Core Historic District.

4.10.3 Underground Storage Tanks and Above Ground Storage Tanks

There are no ASTs or USTs associated with the project area under the Proposed Action or the action alternative (DiGiovanni 2005). No impacts to USTs or ASTs are expected.

4.10.4 Polychlorinated Biphenyls

No PCB transformers are associated with either the proposed project sites or the action alternative; therefore, no impacts are anticipated.

4.10.5 Radon

A radon survey of the installation was completed in 1989-1990 by the Fort Meade EMO. All test results were below the EPA action level of 4 picocuries per liter. Therefore, no further action is required and no impacts are expected.

4.10.6 Storage and Management of Hazardous Materials and Waste

Neither the 70th Intelligence Wing facility to be constructed under the Proposed Action or its action alternative would store pesticides, herbicides, or fertilizers. Application of pesticides at

the structure would be conducted in accordance with federal and state regulations and protocols prescribed in the Fort Meade IPMP. Relative to overall on-post pesticide use, the new facility would not require significant additional pest management support; therefore, no impacts are anticipated.

The proposed 70th Intelligence Wing facility would not store any hazardous materials beyond those routinely used for maintenance and office supplies. All handling, storage, transportation, and disposal of hazardous materials would be conducted in accordance with the *Fort Meade Management Plan for Hazardous Materials and Hazardous Waste* (U.S. Department of the Army 1993) and any other applicable federal, state, local, and installation guidelines. Provided all personnel follow applicable guidelines, no impacts from the storage and handling of hazardous materials are anticipated.

Significant amounts of hazardous waste would not be generated by the proposed construction under the Proposed Action or its alternatives. Procedures for the disposal of hazardous wastes are defined in the *Fort Meade Management Plan for Hazardous Materials and Hazardous Waste*. No impacts from hazardous waste are anticipated.

4.10.7 Contaminated Areas

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), commonly referred to as Superfund, was enacted by Congress on December 11, 1980. This act is targeted at the cleanup of areas contaminated by releases of hazardous substances into the environment. CERCLA assigns accountability for cleanup costs of contaminated areas by providing federal authority to respond directly to the hazardous substance releases that may endanger public health or the environment. This act created a tax on the chemical and petroleum industries that formed a trust fund used for cleaning up abandoned or uncontrolled hazardous waste sites. CERCLA also requires the EPA to establish and maintain a National Priorities List (NPL) of the most serious uncontrolled or abandoned hazardous waste sites requiring long-term remedial response actions (EPA 1999a; MDE 1999).

Fort Meade was designated a NPL site on July 28, 1998. The EPA designated Fort Meade a NPL site based on the evaluation of four locations, the Defense Reutilization and Marketing

Office (DRMO), Active Sanitary Landfill (ASL), Clean Fill Dump (CFD), and Post Laundry Facility (PLF), that have been identified as past storage and disposal sites for hazardous materials and wastes that contained hazardous substances.

Environmental cleanup of potentially contaminated sites on Fort Meade has consisted of a combination of removal actions (eliminating the threat to public health and the environment by removing hazardous substances from the site) and remedial actions to permanently clean up contaminated areas. Contaminated areas are generally located along the southern border of the installation and all are undergoing investigative or remediation activities at this time. The contaminated areas are downgradient from the sites of the Proposed Action and the action alternatives, neither on nor near the areas of proposed construction. Areas of industrial contamination are located along MD Route 32 and outside of the footprint of proposed construction areas. In earlier discussions with the FGGM EMO personnel concerning Fort Meade's contaminated areas, it was established that any potential contaminated groundwater contamination would flow toward MD Route 32 and away from proposed construction (Fort Meade 2001a).

The installation's CERCLA initiative is currently operating parallel to investigative procedures for this assessment. As part of the CERCLA process, contaminated areas are being sampled to determine the extent of contamination. Treatment systems are currently in place and monitoring is being conducted to determine further courses of action. Investigative procedures and remediation activities for Fort Meade's CERCLA initiative continue to be performed concurrently and separate from this assessment.

4.10.8 Permits and Regulatory Authorizations

Fort Meade operates under a number of permits from various federal and state agencies (see Table 3-7). No changes to the existing operational permits and authorizations currently held by Fort Meade would be required under the Proposed Action or the action alternative.

4.11 INFRASTRUCTURE

4.11.1 Utilities

4.11.1.1 Potable Water Supply

Studies indicate that Fort Meade's average water treatment for the 1994-1995 fiscal year was approximately 3.3 mgd. Per the Army Stationing and Installation Plan, the average water treatment (consumption) at an installation like Fort Meade is an estimated 90.0 gpcd. Based on these figures, the existing water treatment and distribution system can support a population of 54,667 to 91,111 persons. Some system deficiencies exist, but no system-wide upgrade is planned for the foreseeable future (Fort Meade 2001a).

Water distribution to a new 70th Intelligence Wing facility built under the Proposed Action or the action alternative would be accommodated within the capacity of the installation's current water supply and distribution system and would not require system upgrades (Fort Meade 2001a). Existing lines are proximal to the proposed sites and have sufficient capacity to accommodate the required level of services. No impacts to the potable water supply would be expected under the Proposed Action or its action alternative.

4.11.1.2 Sewer and Wastewater

The construction activity under the Proposed Action or its action alternative would not impact the ability of Fort Meade to convey and treat wastewater. Fort Meade's sewage treatment plant treats approximately 2.5 mgd but has the capacity to treat an average maximum of 4.5 mgd. The existing sewage collection and treatment system can support a total population of approximately 64,011 to 106,034 persons, a level substantially greater than the current on-post population of 45,726 (Fort Meade 1998a). The addition of approximately forty 70th Intelligence Wing staff personnel on site would not increase total on-post population beyond existing system capacity.

The new 70th Intelligence Wing facility planned under the Proposed Action and the action alternative does not require adjustments to the existing sewage collection system. The government-owned systems may be sold and upgraded in the near future, but this would only be

beneficial and would not affect the construction or operation of the new 70th Intelligence Wing facility.

Site observations indicated that existing wastewater lines are either close to or running through the proposed sites. Any increase in system demands would be within existing limits. No impacts to the wastewater system are anticipated under the Proposed Action or its action alternative.

4.11.1.3 Energy

Electrical Power

Electric power from the commercial supplier, BGE, is readily available at Fort Meade and distributed throughout the installation by primary service of 13.8 kV, 3-phase power over Government-owned lines. Continued availability is anticipated. Major electric service is located in close proximity to all proposed construction sites. Feeder lines would have to be relocated or installed at all sites. No impacts to electrical services are expected under the Proposed Action or the action alternative.

Natural Gas

Natural gas supplies from the commercial supplier, BGE, are readily available at Fort Meade. The extensive BGE and government-owned distribution system provides readily available natural gas throughout the installation. However, natural gas distribution is currently undergoing privatization at Fort Meade. The BGE and government-owned systems loop the entire installation so that almost every building is within a few hundred feet of an active gas supply. The existing BGE natural gas supply and installation distribution system can support a population of approximately 41,488 to 68,000 persons (current Fort Meade population is approximately 50,075). The ready availability of this energy source is expected to continue with an annual anticipated cost increase (USACE 2001a). The 70th Intelligence Wing heating system will be a gas-fired self-contained system (FGGM DPW 2001). No impacts to natural gas services are expected as the result of the Proposed Action or the action alternative.

Fuel Oil

Number 2 fuel oil is used throughout the installation as fuel for individual heat plants. The oil is stored in both ASTs and USTs located near the heat plants they service. There are currently 7 USTs and 43 AGTs remaining on post; however, not all contain fuel (DiGiovanni 2005). The construction project considered under the Proposed Action and its action alternative would not use fuel oil as a heating source; therefore, no impacts would occur.

4.11.2 Solid Waste

To evaluate the potential of impacts to Fort Meade's solid waste generation and disposal under the Proposed Action and its action alternative, several items were considered. These items include evaluating the degree to which the following could impact Fort Meade's Solid Waste Management Plan and the capacity of the landfill used by the installation: (1) proposed construction and (2) potential for additional solid waste from daily operations. Solid waste generated during construction would consist of building materials such as lumber and concrete.

The National Association of Homebuilders (NAHB) Research Center has developed a detailed methodology for conducting waste assessments at construction sites. Assessment data were analyzed for five construction sites in five locations providing a weighted average value for construction debris. Projected solid waste generation has been estimated based on the square footage for the building and the assumption that 4.38 pounds of debris would produced per square foot (Fort Meade 2001a). Using this criteria, construction of the 70th Intelligence Wing facility would produce approximately 11.2 tons of loose debris. With the total landfill capacity of 6,809,530 tons, the solid waste contribution for either the Proposed Action or its action alternative would decrease the landfill life by less than one day. Given that the generation of construction debris would occur over a period of many months, no significant impact on daily operations at the King George landfill would be expected.

Fort Meade is expecting an increase of approximately 100 on-post workers/employees with the implementation of the Proposed Action or its action alternatives. Therefore, solid waste generation may increase. Without considering the potential for recycling, the projected 100 additional personnel would increase the annual solid waste tonnage by 54 tpy, an increase of approximately 0.2 percent. Daily maintenance activities associated with the additional facility

would minimally increase disposed waste compared to the more than 13,000 tons of total annual waste generated by Fort Meade (Marquardt 2002). Therefore, no adverse impacts to solid waste generation and disposition at Fort Meade are anticipated.

4.11.3 Transportation

Under the Proposed Action and the action alternative, there would be a short-term increase in the number of construction and grading equipment, and worker vehicles, on post during construction of the 70th Intelligence Wing. Some minor congestion may occur on roads around the construction site. No significant impacts to traffic are expected during construction of the 70th Intelligence Wing.

The Proposed Action and its action alternative would increase the number of on-site operational personnel by approximately 100 70th Intelligence Wing staffers. Most, if not all, of the staffers would be commuting to Fort Meade from the surrounding communities and outlying areas. The recent implementation of anti-terrorism measures in response to the September 11 tragedy includes closed gates and restricted access on post. Since these measures took effect in September 2001, traffic back-ups at installation gates and other check on-post points are common during peak traffic hours. Because the duration of this situation is unknown, it is not possible at this time to either conduct definitive traffic studies to ascertain normal existing condition to determine potential impacts associated with the Proposed Action and its alternatives. The additional traffic generated by the approximately 100 70th Intelligence Wing staffers would only add minimally to the current congestion problems if the security measures are still in effect once the facility is operational, but the extent of this effect cannot now be determined.

During this emergency situation, Fort Meade is promoting transportation options such as car-pooling and area-wide shuttle services to alleviate current traffic problems (Gebhardt 2001). It can be assumed that once these alternative means of local travel are actively in place, they would continue to serve the Fort Meade community over the long-term, thus minimizing the impact of additional commuter personnel.

4.12 SOCIOECONOMIC CONDITIONS

4.12.1 Region of Influence

The ROI consists of Anne Arundel and Howard Counties. It can be assumed that construction of the 70th Intelligence Wing would be conducted by a local construction company pulling from labor pools within the ROI. There would be an increase in on-site personnel of forty 70th Intelligence Wing operations Staffers. The construction of the 70th Intelligence Wing on Fort Meade is compatible with the usual on-going business activities of the area, and would not change overall living conditions in the ROI. No impacts to social conditions are anticipated.

4.12.2 Demographics

There would be no change in the local population during the construction phase since construction companies would likely draw from within the ROI. There are enough construction workers residing in the Baltimore and Washington, D.C. metropolitan areas within easy daily commuting distance of Fort Meade to meet the construction labor demands of the Proposed Action or its alternatives.

There would be no increase of military personnel and their dependents residing on Fort Meade under the Proposed Action and its action alternative. It is assumed that most, if not all, potential staffers would already live either on post or in surrounding communities. Therefore no significant increase in ROI populations would be anticipated under the Proposed Action or its action alternative.

4.12.3 Economics

The size of the 70th Intelligence Wing building necessitates a moderately large construction effort with a corresponding construction crew. Because of this, there would be minor, temporary positive economic effects in the immediate local area during construction of the 70th Intelligence Wing. No significant economic impacts are anticipated as the result of the Proposed Action or its alternatives.

A net permanent increase in the level of economic activity in the ROI would occur only when an activity comes into the ROI from outside, causing an increase in employment and annual

purchases of goods and services. There would be little to no net increase in economic activity in the ROI because the new structure would be built at Fort Meade to accommodate a service that is currently provided elsewhere on post or within the ROI. The proposed 70th Intelligence Wing project would minimally increase the number of personnel working on Fort Meade, but not within the ROI. No impacts to economic resources under the Proposed Action or its action alternative are expected.

4.12.4 Schools, Libraries, and Recreation Facilities

There would be no increase in the demand for schools, libraries, and recreation facilities during either the construction or operational phases of the 70th Intelligence Wing. There would be no increase in the use of library and recreation facilities on Fort Meade, because there would be no increase in the number of military personnel assigned to the installation under the Proposed Action or its alternatives. Similarly, there would be no increase in demand for library and recreation services located in the ROI outside Fort Meade, as no permanent or significant increase in population would occur.

4.12.5 Public Health and Safety

Neither the Proposed Action nor its action alternative would affect the public health and safety of either the military personnel and their dependents residing on Fort Meade or the civilian workers employed at Fort Meade. The construction and operation of the project would not disturb hazardous materials or hazardous wastes that are present on Fort Meade.

4.12.5.1 Police Services

There would be no increase in the demand for police services from persons living on Fort Meade or within the ROI, as neither the on-post nor off-post populations would increase significantly.

4.12.5.2 Fire and Emergency Services

There would be no significant increase in the demand for fire and emergency services from Fort Meade residents, since the population of the installation would remain the same.

As populations in the surrounding communities would not likely change significantly as the result of the Proposed Action or its action alternative, no increase in off-post fire and emergency services would be required.

4.12.5.3 Medical Facilities

There would be no impact on Fort Meade's existing medical facilities. Since the on-post population would not increase under the Proposed Action or its action alternative, there would be no additional demands for on-post medical services from residents of Fort Meade. For the same reason, the existing off-post medical facilities in the ROI would not be significantly affected.

4.12.5.4 Family Support Services

The new 70th Intelligence Wing facility will have no impact on family support services, as the on-post population would not increase under the Proposed Action or its action alternative, and there would be no additional demands for on-post family support services from residents of Fort Meade. Accordingly, existing family services in the ROI would not be significantly affected.

4.12.6 Noise

The analysis of potential noise impacts resulting from the Proposed Action and the action alternative was based on procedures in the Department of Housing and Urban Development, Office of Community Planning and Development document, "*The Noise Guidebook*," published in September 1991. This document discusses noise and its analysis in detail, and focuses on the concept of noise attenuation by distance. For example, in flat areas with no obstruction between the noise source and a receptor, noise will attenuate approximately 6 decibels for each doubling of distance between source and receptor (e.g., a noise of 90 decibels would be reduced to approximately 50 decibels at 4,000 feet).

A second important concept is the designation of "sensitive" noise receptors. A "sensitive" receptor is a church, school, hospital, retirement home, residential area, or similar facility (HUD 1991). These facilities are less tolerant of noise and noise levels greater than 65 dBA are considered "normally unacceptable." Some allowance for noise levels greater than 65 dBA can be made depending upon the time of day and duration. In particular, higher levels of construction noise are usually considered acceptable because they are of short duration.

Receptors that are not “sensitive” (e.g., office buildings) tolerate higher noise levels. For example, noise levels up to 75 dBA are considered “acceptable” for office buildings (HUD 1991).

The analysis of potential impacts of noise resulting from the Proposed Action and the action alternative focused on whether the noise levels created by project activities would exceed ambient conditions experienced by relevant receptors (baseline condition). Specifically, if there was an existing noise source closer to the receptor than that included as part of the Proposed Action or alternatives, the noise levels from the two sources were compared. For example, it is very possible, if not probable, that the noise from a highway would overwhelm any but the most intrusive individual noises emanating from a construction site, even if it was quite close.

The proposed 70th Intelligence Wing facility will be located between Love Road and 3rd Calvary Road at NSA. The nearest sensitive noise receptors would be the existing buildings to the immediate north and south of the proposed action site, each approximately 100 hundred feet away. Construction noise levels associated with the 70th Intelligence Wing facility could possibly reach 75 to 80 dBA during certain phases of construction at the site. This level of noise could possibly reach annoyance levels at the nearby center. However, construction noise would be relatively short-term, and temporary noise barriers would be constructed to reduce overall noise levels if deemed necessary to avoid disturbing activities at the existing facility. Fort Meade and the contractors would work closely with CDC personnel to ensure that noise levels are acceptable to those attending the nearby facility. No other sensitive noise receptors are located within the immediate area. No significant noise impacts resulting from the Proposed Action or alternatives are anticipated.

4.12.7 Aesthetics and Visual Zones

The proposed 70th Intelligence Wing structure would follow the Fort Meade Installation Design Guide. No impacts to aesthetics or visual zones are anticipated under either the Proposed Action or the action alternative.

4.13 ENVIRONMENTAL JUSTICE

Neither the construction activities nor the operations of the 70th Intelligence Wing project would have disproportionate, adverse environmental or human health impacts on minority or low-income populations. Therefore, the Proposed Action or its action alternative would have no adverse impacts on environmental justice.

Nor would the construction and operation of the proposed project have disproportionate, adverse human health or safety impacts on children. As in this case, any construction project on Fort Meade that is close to a facility frequented by children (e.g., day care center, school, recreation center, theater, athletic facility) will have restricted access. The two project sites considered under the Proposed Action and its action alternative would be located relatively close to either on-post housing, child care facilities, or schools. Therefore, normal precautions (e.g., fencing, proper storage of hazardous materials, and locking equipment) would be taken to prevent access by children. Higher noise levels associated with construction activities would be mitigated, if necessary, by constructing temporary barriers to reduce overall construction noise to safe and acceptable levels.

4.14 CUMULATIVE IMPACTS

CEQ regulations (40 CFR 1508.7) require an analysis of the cumulative impacts resulting from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions, regardless of who undertakes these other actions. Cumulative impacts can result from individually minor, but collectively significant, actions.

This cumulative impacts section of the EA addresses only the cumulative effects arising from considering the Proposed Action and its action alternatives in combination with other ongoing actions at Fort Meade and other actions outside Fort Meade. The cumulative impact of the Proposed Action or the action alternative is evaluated within the context of the greater Fort Meade area, although the specific area of influence varies with the resource being addressed. According to the Fort Meade master planner, there are substantial RCI housing construction projects that could potentially coincide with the construction of the new 70th Intelligence Wing in 2003 (Galiber 2002). These projects include RCI Neighborhood I, southeast of Rockenbach

Road and Cooper Avenue, adjacent to Alternative site 1, and RCI Neighborhood II west of the 8100 area. EAs conducted on the RCI projects found that no significant impacts would result from these housing construction activities (USACE 2001). The proposed 70th Intelligence Wing project is quite small by comparison, and should not contribute significantly to the cumulative impact of these larger developments. The Intelligence Material Activity (IMA) facility, and the CDC III, will also be under construction during this time (Galiber 2002). The IMA facility site is located on Rock Avenue near Huber Road (Building 2266 footprint) far from the proposed 70th Intelligence Wing location. The CDC III site is located in the 900 area off Ernie Pyle Street adjacent to the Youth Center. Both of these projects are small and would not significantly contribute to cumulative impacts on any resources.

For the Proposed Action and its action alternative, effects on most resources during construction would be temporary and short-lived. Any equipment-related emissions or noise would be minimal and comparable to those released by the four existing buildings that comprise the 70th Intelligence Wing facility. There would be no change in the on-post resident population. Because of recent increased security on post, cumulative impacts to traffic volumes and resulting air emissions cannot be definitively addressed in this EA at this time. It is assumed mitigation measures would be implemented to minimize any potential impacts to these resources. This 70th Intelligence Wing facility is an important part of the development providing support to the military and other federal tenants consistent with Fort Meade's transition to an administrative center. Neither the Proposed Action nor its action alternative would significantly contribute to cumulative impacts on any resource.

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5.0 CONCLUSIONS

The No-Action Alternative, as described under baseline conditions, would not meet the purpose of and need for providing adequate facilities and support for the 70th Intelligence Wing. The current 70th Intelligence Wing facilities do not meet the required security and other needs of the military community. The site considered under the Proposed Action is an open existing parking area. The construction of the new 70th Intelligence Wing facility on this land would reduce the potential for new impacts to natural resources. This EA concludes that the Proposed Action would best meet the project goals while having minimal impact on the environment.

Table 5-1 provides a concise comparison of effects on resources that would result from the Proposed Action and the action alternative.

Table 5-1. Comparison of effects of the Proposed Action, No-Action Alternative, and the Action Alternative for a new 70th Intelligence Wing facility at the NSA Exclusive Area at Fort Meade, MD.

Resource	Proposed Action	No-Action Alternative	Action Alternative
Land Use	Under the Proposed Action, the new 70th Intelligence Wing facility would be sited on an existing parking lot in an already developed area. Construction of the 70th Intelligence Wing would be consistent with post-wide and regional development strategies included in the post's land use plan. No adverse impacts to land use are anticipated.	Conditions on post would remain unchanged. Modest development would continue in the surrounding communities. No effect.	Under the action alternative, the proposed 70th Intelligence Wing would be constructed on an existing playing field. Construction of the 70th Intelligence Wing would be consistent with post-wide and regional development strategies, included within the post's land use plan. No adverse impacts to land use would be expected.
Air Quality	<p>Construction-related emissions would be short term and temporary.</p> <p>Operations-related emissions from the 70th Intelligence Wing would make minimal (less than 1 percent) contribution to the total annual air emissions at Fort Meade. NO_x emissions from the boiler are estimated to be 0.28 tpy, and CO would be 0.14 tpy. All other pollutant emissions are negligible (i.e., 0.01 tpy or less). An MDE air quality permit may be required.</p> <p>Because of current access restrictions on post, no definitive air quality analysis of emissions from construction and commuter vehicles can be conducted, but it is assumed that Fort Meade will continue to promote carpooling and shuttle services to minimize commuter vehicle emissions.</p>	Conditions on post would remain unchanged. No effect.	<p>Construction-related emissions would be short term and temporary.</p> <p>Operations-related emissions from the 70th Intelligence Wing would make minimal (less than 1 percent) contribution to the total annual air emissions at Fort Meade. NO_x emissions from the boiler are estimated to be 0.28 tpy, and CO would be 0.14 tpy. All other pollutant emissions are negligible (i.e., 0.01 tpy or less). An MDE air quality permit may be required.</p> <p>Because of current access restrictions on post, no definitive air quality analysis of emissions from construction and commuter vehicles can be conducted but it is assumed that Fort Meade will continue to promote carpooling and shuttle services to minimize commuter vehicle emissions.</p>
Water Resources	<p>Surface waters are not likely to be affected under the Proposed Action. Given the planned use of storm water management features, both during and after construction, no significant impacts on surface waters from runoff are anticipated.</p> <p>Fort Meade groundwater resources are sufficient to meet potable water supply needs. Project construction plans include shallow subsurface excavations. No significant, adverse impacts to groundwater are anticipated.</p>	Conditions on post would remain unchanged. Modest development in the surrounding communities suggests a watershed approach to stormwater planning. No effect.	<p>Surface waters are not likely to be affected under the action alternative. Given the planned use of storm water management features, both during and after construction, no significant of surface waters from runoff are anticipated.</p> <p>Fort Meade groundwater resources are sufficient to meet potable water supply needs. Project construction plans include shallow subsurface excavations. No significant, adverse impacts to groundwater are anticipated.</p>
Aquatic Resources and Wetlands	There are no mapped wetlands areas on or around the construction site considered under the Proposed Action. No impacts are anticipated.	Conditions on post would remain unchanged. No effect.	There are no mapped wetlands areas on or around the construction site considered under the action alternative. No impacts are anticipated.

Table 5-1. Comparison of effects of the Proposed Action, No-Action Alternative, and the Action Alternative for a new 70th Intelligence Wing facility at the NSA Exclusive Area at Fort Meade, MD.

Resource	Proposed Action	No-Action Alternative	Action Alternative
Vegetation	Construction on this currently developed site would remove primarily existing herbaceous and grassed vegetation. Landscape plantings would provide positive visual values.	Conditions on post would remain unchanged. No effect.	Under the action alternative, construction on the site would require the removal of some existing herbaceous and grassy vegetation and scattered small trees. New vegetation would be planted around the new building once construction is complete. No significant impacts are expected.
Wildlife Resources	Under the Proposed Action, the project would be built on an existing parking lot with poor wildlife habitat. It is anticipated that the small mammals and birds present would attempt to relocate to similar habitats on post. Landscape plantings using native plants around proposed new structures may improve habitat value. Construction of the 70th Intelligence Wing follows Fort Meade's Master Plan and Fort Meade's INRMP has addressed, in detail, overall wildlife habitat preservation on post. No impacts are anticipated.	Conditions on post would remain unchanged. No effect.	Under the action alternative, the new 70th Intelligence Wing facility would be constructed on a previously disturbed playing field. Any wildlife found here would attempt to relocate to similar habitat elsewhere on the installation. Construction of the 70th Intelligence Wing follows Fort Meade's Master Plan and Fort Meade's INRMP has addressed, in detail, overall wildlife habitat preservation on post. No impacts are anticipated.
Threatened & Endangered Species	There are no federally listed threatened or endangered species known to exist on Fort Meade. The project area drains indirectly into the Little Patuxent River (home to the rare glassy darter); nevertheless, project plans would minimize surface runoff and direct discharges into appropriate drainage structures. No impacts are anticipated.	Conditions on post would remain unchanged. No effect.	There are no federally listed threatened or endangered species known to exist on Fort Meade. The project drains indirectly into the Little Patuxent River (home to the rare glassy darter); nevertheless, project plans would minimize surface runoff and direct discharges into appropriate drainage structures. No impacts are anticipated.
Prime and Unique Farmlands	The site does not have soils that are categorized as prime farmland. No impacts are anticipated.	Conditions on post would remain unchanged. No effect.	Soils of the area considered under the action alternative are not categorized as prime farmland. No impacts are anticipated.
Wild and Scenic Rivers	The Patuxent River and Severn River are classified as Maryland "Scenic and Wild" rivers. Best management practices, such as planting riparian buffers along tributary stream channels and implementing stormwater controls at Fort Meade, minimize potential effects to these river systems. No rivers in Maryland are classified under the Federal Wild and Scenic Rivers Act. No adverse impacts are anticipated.	Conditions on post would remain unchanged. No effect.	The Patuxent River and Severn River are classified as Maryland "Scenic and Wild" rivers. Best management practices, such as planting riparian buffers along tributary stream channels and implementing stormwater controls at Fort Meade, would minimize potential effects to these river systems. No rivers in Maryland are classified under the Federal Wild and Scenic Rivers Act. No adverse impacts are anticipated.

Table 5-1. Comparison of effects of the Proposed Action, No-Action Alternative, and the Action Alternative for a new 70th Intelligence Wing facility at the NSA Exclusive Area at Fort Meade, MD.

Resource	Proposed Action	No-Action Alternative	Action Alternative
Cultural Resources	There are no known cultural resources on Proposed Action site. No adverse impacts are anticipated.	Fort Meade currently implements an approved Cultural Resource Management Plan. No effect.	There are no known cultural resources on the action alternative site. No adverse impacts are anticipated.
Hazardous, Toxic, and Radioactive Substances	Any HAZMAT or waste encountered during construction would be handled according to appropriate safety procedures. No adverse impacts are anticipated. Fort Meade has recently been designated as a Superfund site. CERCLA investigations are currently underway. No known contaminated sites are located in the proposed project area.	Maintenance, materials handling, and waste disposal would not change on Fort Meade. No effect.	Any HAZMAT or waste encountered during construction, or demolition, would be handled according to appropriate safety procedures. No adverse impacts are anticipated. Fort Meade has recently been designated as a Superfund site. CERCLA investigations are currently underway. No known contaminated sites are located in the proposed project area.
Infrastructure	Water, wastewater capacity, and natural gas are sufficient to support the new facility. New electrical lines would be extended to the site. No significant impacts to service from water, wastewater, or energy systems are anticipated. Demands on solid waste facilities would increase minimally, but within capacity.	The demand for infrastructure and its capacity would remain the same. No effect.	Water, wastewater capacity, electricity, and natural gas are sufficient to support the new facility. No significant impacts to service from water, wastewater, or energy systems are anticipated. Demands on solid waste facilities would increase minimally, but within capacity.
Traffic	The project will bring approximately 40 personnel now working off-base to the facility. Because of anti-terrorist measures and restricted access to the post, no definitive traffic analysis of new commuting 70th Intelligence Wing staff can now be conducted. It is assumed that Fort Meade will continue to promote car-pooling and shuttle services to minimize current and future traffic congestion.	Traffic levels would not increase on Fort Meade. Restricted access and resulting traffic backups at post entrance gates are likely to continue. Modest development in the surrounding communities would likely increase traffic congestion, but regional transportation plans have been developed to address this growth.	The project will bring approximately 40 personnel now working off-base to the facility. Because of anti-terrorist measures and restricted access to the post, no definitive traffic analysis of new commuting 70th Intelligence Wing staff can now be conducted. It is assumed that Fort Meade will continue to promote car-pooling and shuttle services to minimize current and future traffic congestion.
Socioeconomic Conditions	Socioeconomic effects of construction, if any, would be minimal and temporary. 70th Intelligence Wing operation on Fort Meade would not change overall living conditions in the ROI. No impacts to social conditions are anticipated. No significant effect on area economy is expected.	Conditions on post would remain unchanged. No effect.	Socioeconomic effects of construction, if any, would be minimal and temporary. 70th Intelligence Wing operation on Fort Meade would not change overall living conditions in the ROI. No impacts to social conditions are anticipated. No significant effect on area economy is expected.

Table 5-1. Comparison of effects of the Proposed Action, No-Action Alternative, and the Action Alternative for a new 70th Intelligence Wing facility at the NSA Exclusive Area at Fort Meade, MD.

Resource	Proposed Action	No-Action Alternative	Action Alternative
Noise	Construction noise would be of relatively short duration and limited to the project area. Temporary noise barriers would be constructed if necessary. No adverse impacts to sensitive noise receptors are anticipated.	Modest development in the surrounding communities would likely result in some increase in noise levels. No effect.	Construction noise would be of relatively short duration and limited to the project area. Temporary noise barriers would be constructed if necessary. No adverse impacts to sensitive noise receptors are anticipated.
Environmental Justice	No disproportionately high adverse effects on minority or low-income communities or on children are anticipated.	Conditions on post would remain unchanged. No effect.	No disproportionately high adverse effects on minority or low-income communities or on children are anticipated.

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Reference Materials

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APPENDIX A
AGENCY COORDINATION LETTERS

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23 March 2005

Ms. Elizabeth J. Cole
Administrator
Project Review and Compliance
Maryland Historic Trust
100 Community Place
Crownsville, MD 21032-2023

Dear Ms. Cole:

Fort George G. Meade is currently preparing an Environmental Assessment (EA) pursuant to requirements of National Environmental Policy Act (NEPA) to evaluate the potential environmental consequences of a proposed action on the installation. Versar, Inc., has been retained as the contractor to prepare this EA, and is forwarding this request on behalf of Fort Meade.

Fort Meade has requested the preparation of this EA to address the construction of a new 72,000 square-foot building for the 70th Intelligence Wing (70 IW) at the National Security Agency Exclusive Use Area on Fort Meade. Currently, the 70 IW operations are located in four separate facilities on Fort Meade and one National Security Agency Facility located 9 miles away. Many aspects of the existing 70 IW facilities are inadequate. Much of the existing space consists of converted dormitory rooms, resulting in 40 airmen being required to reside off post each year in facilities converted to office space with ceiling heights as low as 6.5 feet. Five Wing and Group staff agencies, as well as Wing and Group operations functions are located 9 miles away in leased facilities. There is no resident Sensitive Compartmentalized Information Facility (SCIF) space available to the Wing leadership and staff, thereby denying access to critical, time sensitive, classified information required to control world-wide intelligence resources under the 70 IW command. The 70 IW is currently in violation of Air Force regulations 32-1024 and Air Force Handbook 32-1084 owing to the lack of adequate space.

The Proposed Action would construct a new 70th Intelligence Wing facility on an existing paved parking lot between Love Road and 3rd Cavalry Road at NSA. A new open paved parking lot with 269 spaces for the facility would be constructed on an existing grassed playing field immediately north of Newjon Road, near 3rd Calvary Road. The attached figure shows the proposed location of the new 70th Intelligence Wing facility and its associated parking lot. The purpose of constructing a new 70th Intelligence Wing facility is to support the mission of the 70 IW and 694 IG to communicate at all levels of security in a timely manner with national decision-makers, Theater Commanders, and Warfighters of all the services. The proposed project would facilitate more effective communication between all essential parties by bringing together the now geographically separated members of the 70th Intelligence Wing in one building with updated, state-of-the-art facilities.

9200 RUMSEY ROAD • COLUMBIA, MARYLAND 21045-1934 • TELEPHONE: (410) 964-9200 • FAX: (410) 964-5156

The EA will also evaluate the impacts of the no-action alternative, as well as one action alternative. The no-action alternative is prescribed by the regulations of the Council on Environmental Quality, and serves as the benchmark of existing conditions against which the proposed action can be evaluated. The baseline established to evaluate the environmental effects of the proposed action and the action alternative is the existing conditions at Fort George G. Meade and adjacent areas as of 2005. The action alternative to be considered would locate the same new 70th Intelligence Wing facility immediately north of Newjon Road, near 3rd Cavalry Road at the site of an existing playing field (see attached figure). The existing paved parking area on the site of the Proposed Action (immediately west of 3rd Calvary Road) would be used for facility parking.

We are currently evaluating the potential environmental, social, and cultural impacts attributable to the proposed action and its action alternative. We would like to consider your comments and concerns about specific resource issues related to this proposed project. I will incorporate and discuss any issues that you provide information for. To allow adequate consideration of your comments and to ensure timely completion of the EA, please respond by 4 April 2005. Please address correspondence to my attention at the following address:

Steve Harriott
Versar, Inc.
9200 Rumsey Road
Columbia, MD 21045

If you have any questions regarding this coordination effort, please feel free to either call me at (410) 740-6099, or send an email to harriottste@versar.com.

Sincerely,

Steve Harriott
Professional Wetland Scientist

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

Lori A. Byrne
Wildlife and Heritage Service
Maryland Department of Natural Resources
Tawes State Office Building
580 Taylor Avenue
Annapolis, Maryland 21401

Mary J. Ratnaswamy, Ph.D.
Program Supervisor, Endangered Species
U.S. Fish and Wildlife Service
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, Maryland 21401

Joane Mueller
Clearinghouse Coordinator
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, Maryland 21230



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23 March 2005

MAR 28 2005

Ms. Elizabeth J. Cole
Administrator
Project Review and Compliance
Maryland Historic Trust
100 Community Place
Crownsville, MD 21032-2023

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AN

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JES
4/1/05

Area Surveyed - AN345, AN260 - unknown sites

together the now geographically separated members of the 70th Intelligence Wing in one building with updated, state-of-the-art facilities.

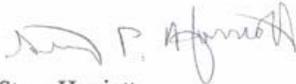
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Steve Harriott
Versar, Inc.
9200 Rumsey Road
Columbia, MD 21045

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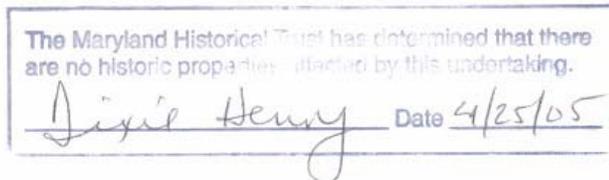
Sincerely,



Steve Harriott
Professional Wetland Scientist

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MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard o Baltimore Maryland 21230-1718
(410) 537-4120

Robert L. Ehrlich, Jr.
Governor

Michael S. Steele
Lt. Governor

Kend P. Philbrick
Secretary

Jonas A. Jacobson
Deputy Secretary

May 18, 2005

Mr. Steve Harriott
Versar, Inc.
9200 Rumsey Road
Columbia MD 21045

RE: MDE Identification Number: ES20050506-0017
Project: Fort George G. Meade – 70th Intelligence Wing

Dear Mr. Harriott:

Thank you for the opportunity to review the above referenced project. The document was circulated throughout the Maryland Department of the Environment (MDE) for review, and the following comment is offered for your consideration.

1. Fort George Meade is Comprehensive Environmental Response Compensation Liability Act (CERCLA) listed site MD-# 067. Contact the Environmental Response and Restoration Program at (410) 537-3437 for more information.

Again, thank you for giving MDE the opportunity to review this project. If you have any questions, please feel free to call me at (410) 537-4120.

Sincerely,

Joane D. Mueller
Clearinghouse Coordinator



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401
410/573-4575



April 21, 2005

Steve Harriott
Versar Inc. ESM Operations
9200 Rumsey Road
Columbia, MD 21045-1934

RE: Intelligence Wing, Anne Arundel County, MD

Dear Mr. Harriott:

This responds to your letter, received March 25, 2005, requesting information on the presence of species which are federally listed or proposed for listing as endangered or threatened within the vicinity of the above reference project area. We have reviewed the information you enclosed and are providing comments in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

Except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project impact area. Therefore, no Biological Assessment or further section 7 Consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For information on the presence of other rare species, you should contact Lori Byrne of the Maryland Wildlife and Heritage Division at (410) 260-8573.

An additional concern of the Service is wetlands protection. Federal and state partners of the Chesapeake Bay Program have adopted an interim goal of no overall net loss of the Basin's remaining wetlands, and the long term goal of increasing the quality and quantity of the Basin's wetlands resource base. Because of this policy and the functions and values wetlands perform, the Service recommends avoiding wetland impacts. All wetlands within the project area should be identified, and if construction in wetlands is proposed, the U.S. Army Corps of Engineers, Baltimore District, should be contacted for permit requirements. They can be reached at (410) 962-3670.

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interests in these resources. If you have any questions or need further assistance, please contact Maricela Constantino at (410) 573-4542.

Sincerely,

G. A. Moser

for Mary J. Ratnaswamy, Ph.D.
Program Supervisor, Threatened and Endangered Species



Robert L. Ehrlich, Jr., Governor

Michael S. Steele, Lt. Governor

C. Ronald Franks, Secretary

March 29, 2005

Mr. Steve Harriott
Versar, Inc.
9200 Rumsey Road
Columbia MD 21045-1934

Dear Mr. Harriott:

This letter is in response to your letter, dated March 23, 2005, requesting environmental screening for the proposed construction of a **New 70th Intelligence Wing Facility** at Fort Meade, Anne Arundel County. It is our understanding that the proposed facility will be built on an existing paved parking lot and that a new parking lot will be constructed on an existing grassed playing field.

The Environmental Review Unit of the Department of Natural Resources has reviewed the information you provided. From our review of this information we have determined that the proposed activities do not conflict with any Department goals, objectives or programs.

Thank you for the opportunity to review and comment on this project. If you should have any questions concerning our review, please contact me at 410-260-8331.

Sincerely,


Ray C. Dintaman, Jr., Director
Environmental Review Unit

Tawes State Office Building • 580 Taylor Avenue • Annapolis, Maryland 21401

410.260.8DNR or toll free in Maryland 877.620.8DNR • www.dnr.maryland.gov • TTY users call via Maryland Relay

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APPENDIX B

PLANT LIST

NSA/FORT MEADE AREA

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Table B-1. Plants observed by Versar during the November 2001, May 2002, and July 2002 rare, threatened, and endangered species studies at the NSA exclusive use area, Fort George G. Meade, Anne Arundel County, Maryland. An explanation of wetland indicator statuses is located at the end of the table.

TREES		
SCIENTIFIC NAME	COMMON NAME	WETLAND INDICATOR STATUS
<i>ACER NEGUNDO</i>	BOXELDER	FAC+
<i>ACER RUBRUM</i>	RED MAPLE	FAC
<i>ACER SACCHARINUM</i>	SILVER MAPLE	FACW
<i>AILANTHUS ALTISSIMA</i>	TREE OF HEAVEN	NI
<i>CARPINUS CAROLINIANA</i>	MUSCLEWOOD	FAC
<i>CARYA CORDIFORMIS</i>	BITTERNUT HICKORY	FACU+
<i>CATALPA BIGNONIOIDES</i>	COMMON CATALPA	UPL
<i>CELTIS OCCIDENTALIS</i>	HACKBERRY	FACU
<i>CERCIS CANADENSIS</i>	REDBUD	FACU-
<i>FRAXINUS AMERICANA</i>	WHITE ASH	FACU
<i>FRAXINUS PENNSYLVANICA</i>		
<i>VAR. SUBINTEGERRIMA</i>	GREEN ASH	FACW
<i>GLEDITSIA TRIACANTHOS</i>	HONEY LOCUST	FAC-
<i>JUGLANS NIGRA</i>	BLACK WALNUT	FACU
<i>LIQUIDAMBAR STYRACIFLUA</i>	SWEET GUM	FAC
<i>LIRIODENDRON TULIPIFERA</i>	TULIP POPLAR	FACU
<i>MORUS ALBA</i>	WHITE MULBERRY	UPL
<i>PLATANUS OCCIDENTALIS</i>	SYCAMORE	FACW-
<i>POPULUS DELTOIDES</i>	EASTERN COTTONWOOD	FAC
<i>PRUNUS SEROTINA</i>	BLACK CHERRY	FACU
<i>PRUNUS VIRGINIANA</i>	CHOKE CHERRY	FACU
<i>QUERCUS ALBA</i>	WHITE OAK	FACU-
<i>QUERCUS PALUSTRIS</i>	PIN OAK	FACW
<i>QUERCUS PHELLOS</i>	WILLOW OAK	FAC+
<i>QUERCUS PRINUS</i>	CHESTNUT OAK	UPL
<i>QUERCUS VELUTINA</i>	BLACK OAK	NI
<i>ROBINIA PSEUDOACACIA</i>	BLACK LOCUST	FACU-
<i>SALIX BABYLONICA</i>	WEeping WILLOW	FACW-
<i>SALIX DISCOLOR</i>	PUSSY WILLOW	FACW

Table B-1. (Continued)		
SCIENTIFIC NAME	COMMON NAME	WETLAND INDICATOR STATUS
<i>SALIX FRAGILIS</i>	CRACK WILLOW	FAC+
<i>SALIX NIGRA</i>	BLACK WILLOW	FACW+
<i>SASSAFRAS ALBIDUM</i>	SASSAFRAS	FACU-
<i>TILIA AMERICANA</i>	BASSWOOD	FACU
<i>ULMUS AMERICANA</i>	AMERICAN ELM	FACW-
<i>ULMUS RUBRA</i>	SLIPPERY ELM	FAC
SHRUBS/WOODY VINES		
<i>ALNUS RUGOSA</i>	SPECKLED ALDER	FACW+
<i>ASIMINA TRILOBA</i>	PAWPAW	FACU+
<i>LIGUSTRUM VULGARE</i>	PRIVET	FACU
<i>LINDERA BENZOIN</i>	SPICEBUSH	FACW-
<i>LONICERA MORROWII</i>	MORROW'S HONEYSUCKLE	NI
<i>PARTHENOCISSUS QUINQUEFOLIA</i>	VIRGINIA CREEPER	FACU
<i>RHUS GLABRA</i>	SMOOTH SUMAC	NI
<i>RHUS TYPHINA</i>	STAGHORN SUMAC	NI
<i>RUBUS PHOENICOLASIUS</i>	WINEBERRY	NI
<i>TOXICODENDRON RADICANS</i>	POISON IVY	FAC
<i>VIBURNUM ACERIFOLIUM</i>	MAPLE LEAVED VIBURNUM	UPL
<i>VIRBURNUM DENTATUM</i>	SOUTHERN ARROWWOOD	FAC
<i>VITIS LABRUSCA</i>	FOX GRAPE	FACU
HERBS		
<i>ACHILLIA MILLEFOLIUM</i>	YARROW	FACU
<i>AGRIMONIA PARVIFLORA</i>	SMALL FLOWERED AGRIMONY	FAC
<i>AGROSTIS ALBA</i>	REDTOP	FACW
<i>ALLIARIA PETIOLATA</i>	GARLIC MUSTARD	FACU-
<i>AMBROSIA ARTEMISIIFOLIA</i>	COMMON RAGWEED	FACU
<i>AMBROSIA TRIFIDA</i>	GREAT RAGWEED	FAC
<i>ARCTIUM MINUS</i>	COMMON BURDOCK	NI
<i>ARISAEMA TRIPHYLLUM</i>	JACK-IN-THE-PULPIT	FACW-
<i>ARONIA PRUNIFOLIA</i>	PURPLE CHOKEBERRY	FACW
<i>ASCLEPIAS INCARNATA</i>	COMMON MILKWEED	NI

Table B-1. (Continued)		
SCIENTIFIC NAME	COMMON NAME	WETLAND INDICATOR STATUS
<i>ASCLEPIAS SYRIACA</i>	SWAMP MILKWEED	OBL
<i>ASPLENIUM PLATYNEURON</i>	EBONY SPLEENWORT	FACU
<i>BIDENS FRONDOSA</i>	BEGGAR TICKS	FACW
<i>BOHEMERIA CYLINDRICA</i>	FALSE NETTLE	FACW+
<i>BOTRYCHIUM ONEIDENSE</i>	BLUNTLOBE GRAPEFERN	NI
<i>CAREX ATLANTICA</i>	ATLANTIC SEDGE	FACW+
<i>CAREX HIRTIFOLIA</i>	PUBESCENT SEDGE	NI
<i>CAREX LURIDA</i>	SALLOW SEDGE	OBL
<i>CASTANEA PUMILA</i>	CHINQUAPIN	NI
<i>CICHORIUM INTYBUS</i>	CHICKORY	NI
<i>CIMICIFUGA RACEMOSA</i>	BLACK COHOSH	NI
<i>COMMELINA COMMUNIS</i>	ASIATIC DAYFLOWER	FAC-
<i>CORONILLA VARIA</i>	CROWN VETCH	NI
<i>CUSCUTA GRONOVII</i>	DODDER	NI
<i>CYPERUS ERYTHORRHIZOS</i>	RED ROOTED SEDGE	FACW+
<i>CYPERUS RETRORSUS</i>	BARREN CYPERUS	FAC-
<i>DACTYLIS GLOMERATA</i>	ORCHARD GRASS	FACU
<i>DAUCUS CAROTA</i>	WILD CARROT	NI
<i>DIANTHUS ARMERIA</i>	DEPTFORD PINK	NI
<i>DISCOREA VILLOSA</i>	COMMON WILD YAM	FAC+
<i>ECHINOCHLOA CRUS-GALLI</i>	BARNYARD GRASS	FACU
<i>ELEOCHARIS OBTUSA</i>	BLUNT SPIKERUSH	OBL
<i>EQUISETUM ARVENSE</i>	FIELD HORSETAIL	FAC
<i>ERAGROSTIS PECTINACEA</i>	PURPLE LOVE GRASS	FAC
<i>EUPATORIUM MACULATUM</i>	SPOTTED JOE PYE WEED	FACW
<i>EUPATORIUM SEROTINUM</i>	LATE FLOWERING BONESET	FAC-
<i>EUPATORIUM PERFOLIATUM</i>	THOROUGHWORT BONESET	FACW+
<i>EUPATORIUM RUGOSUM</i>	WHITE SNAKEROOT	NI
<i>EUPHORBIA COROLLATA</i>	FLOWERING SPURGE	NI
<i>EUTHAMIA GRAMINIFOLIA</i>	GRASS-LEAVED GOLDENROD	FAC
<i>FESTUCA PRATENSIS</i>	MEADOW FESCUE	FACU-
<i>GEUM CANADENSE</i>	WHITE AVENS	FACU

Table B-1. (Continued)		
SCIENTIFIC NAME	COMMON NAME	WETLAND INDICATOR STATUS
<i>GLECOMA HEDERACEA</i>	GILL-OVER-THE-GROUND	FACU
<i>HYDROCOTYLE AMERICANA</i>	AMERICAN WATER PENNYWORT	OBL
<i>HYPERICUM PERFORATUM</i>	COMMON ST. JOHNS-WORT	NI
<i>IMPATIENS DUTHICAE</i>	JEWELWEED	FACW
<i>IPOMOEA HEDERIFOLIA</i>	IVYLEAF MORNING GLORY	NI
<i>JUNCUS EFFUSUS</i>	COMMON RUSH	FACW+
<i>JUNCUS TENUIS</i>	SLENDER RUSH	FAC-
<i>LACTUCA BIENNIS</i>	TALL BLUE LETTUCE	FACU
<i>LINARIA VULGARIS</i>	BUTTER-AND-EGGS	NI
<i>LOBELIA CARDINALIS</i>	CARDINAL FLOWER	FACW+
<i>LONICERA JAPONICA</i>	JAPANESE HONEYSUCKLE	FAC-
<i>LUDWIGIA PALUSTRIS</i>	WATER PURSLANE	OBL
<i>LYCOPUS VIRGINICUS</i>	VIRGINIA BUGLEWEED	OBL
<i>LYTHRUM SALICARIA</i>	PURPLE LOOSESTRIFE	FACW+
<i>MAINTHEUM RACEMOSUM</i>	FALSE SOLOMON'S SEAL	FACU-
<i>MENTHA PIPERITA</i>	PEPPERMINT	FACW+
<i>NEPETA CATARIA</i>	CATNIP	FACU
<i>OENOTHERA BIENNIS</i>	EVENING PRIMROSE	FACU-
<i>ONONCLEA SENSIBILIS</i>	SENSITIVE FERN	FACW
<i>OSMUNDA CINNAMOMEA</i>	CINNAMON FERN	FACW
<i>PANICUM VIRGATUM</i>	SWITCHGRASS	FAC
<i>PARTHENOCISSUS QUINQUEFOLIA</i>	VIRGINIA CREEPER	FACU
<i>PHALARIS ARUNDINACEA</i>	REED CANARY GRASS	FACW+
<i>PHRAGMITES AUSTRALIS</i>	COMMON REED	FACW
<i>PHYSALIS SUBGLABRATA</i>	SMOOTH GROUND CHERRY	NI
<i>PHYTOLACCA AMERICANA</i>	POKEWEED	FACU+
<i>PILEA PUMILA</i>	CLEARWEED	FACW
<i>PODOPHYLLUM PELTATUM</i>	MAYAPPLE	FACU
<i>POLYGONUM CUSPIDATUM</i>	JAPANESE KNOTWEED	FACU-
<i>POLYGONUM PENNSYLVANICUM</i>	PENNSYLVANIA SMARTWEED	FACW
<i>POLYGONUM PERSICARIA</i>	LADY'S THUMB	FACW
<i>POLYGONUM VIRGINIANUM</i>	JUMPSEED	FAC
<i>POLYGONUM PUNCTATUM</i>	DOTTED SMARTWEED	OBL

Table B-1. (Continued)		
SCIENTIFIC NAME	COMMON NAME	WETLAND INDICATOR STATUS
POLYSTICHUM ACROSTICHOIDES	CHRISTMAS FERN	FACU-
SANGUINARIA CANADENSIS	BLOODROOT	NI
SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM GRASS	FACU
SCIRPUS ATROVIRENS	DARK GREEN BULRUSH	OBL
SCIRPUS CYPERINUS	WOOLGRASS	FACW+
SOLANUM DULCAMARA	BITTERSWEET NIGHTSHADE	FAC-
SOLIDAGO RUGOSA	ROUGH STEMMED GOLDENROD	FAC
SOLIDAGO CANADENSIS	CANADA GOLDENROD	FACU
SYMPLOCARPUS FOETIDUS	SKUNK CABBAGE	OBL
THELYPTERIS NOVEBORACENSIS	NEW YORK FERN	FAC
TRIDENS FLAVUS	PURPLE-TOP GRASS	FACU
TYPHA LATIFOLIA	BROAD-LEAVED CATTAIL	OBL
URTICA DIOICA	STINGING NETTLE	FACU
VERBASCUM THAPSUS	COMMON MULLIEN	UPL
<u>FEDERAL DEFINITIONS (REED 1988, FICWD 1989)</u>		
OBL:	Obligate Hydrophyte. Always found in wetlands (greater than 99%).	
FACW:	Wet Facultative Hydrophyte. Usually found in wetlands (66-99% frequency).	
FAC:	Facultative Hydrophyte. Sometimes found in wetlands (34-66% frequency).	
FACU:	Dry Facultative Hydrophyte. Seldom found in wetlands (1-33% frequency).	
UPL:	Upland Plant. Not found in wetlands in this region, but associated with wetlands elsewhere.	
NI:	No indicator status has been assigned to this taxa.	
<u>MODIFIERS:</u>		
+	Found at wetter end of frequency spectrum within the category	
-	Found at drier end of frequency spectrum within the category	

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APPENDIX C

BIRDS OBSERVED
NSA/FORT MEADE AREA

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Table C-1. Sixty-three species of birds observed by Versar on, adjacent to, or flying over the NSA exclusive use area at Fort George G. Meade, Anne Arundel County, Maryland, November 2001, May 2002, and July 2002.

FAMILY: SUBFAMILY Species	COMMON NAME
ARDEIDAE	HERONS, BITTERNs
<i>Ardea herodias</i>	Great blue heron
<i>Casmerodius albus</i>	Great egret
<i>Egretta thula</i>	Snowy egret
ANATIDAE	SWANS, GEESE, DUCKS
<i>BRANTA CANADENSIS</i>	CANADA GOOSE
<i>ANAS PLATYRHYNCHOS</i>	MALLARD
CATHARTIDAE	AMERICAN VULTURES
<i>CORAGYPS ATRATUS</i>	BLACK VULTURE
<i>CATHARTES AURA</i>	TURKEY VULTURE
ACCIPITRIDAE	HAWKS, EAGLES, VULTURES
<i>BUTEO LINEATUS</i>	RED-SHOULDERED HAWK
<i>BUTEO JAMAICENSIS</i>	RED-TAILED HAWK
FALCONIDAE	FALCONS
<i>FALCO SPARVERIUS</i>	AMERICAN KESTREL
CHARADRIIDAE	PLOVERS
<i>CHARADRIUS VOCIFERUS</i>	KILLDEER
SCOLOPACIDAE	WOODCOCK AND SNIPE
<i>GALLINAGO GALLINAGO</i>	COMMON SNIPE
COLUMBIDAE	PIGEONS AND DOVES
<i>ZENAIIDA MACROURA</i>	MOURNING DOVE
<i>COLUMBA LIVIA</i>	ROCK DOVE
CUCULIDAE	CUCKOOS
<i>COCCYZUS AMERICANUS</i>	YELLOW-BILLED CUCKOO

Table C-1. (Continued)	
FAMILY: SUBFAMILY	COMMON NAME
APODIDAE	SWIFTS
<i>CHAETURA PELAGICA</i>	CHIMNEY SWIFT
ALCEDINIDAE	KINGFISHERS
<i>CERYLE ALCYON</i>	BELTED KINGFISHER
PICIDAE	WOODPECKERS
<i>MELANERPES CAROLINUS</i>	RED-BELLIED WOODPECKER
<i>PICOIDES PUBESCENS</i>	DOWNY WOODPECKER
<i>COLAPTES AURATUS</i>	COMMON FLICKER
TYRANNIDAE	FLYCATCHERS
<i>CONTOPUS VIRENS</i>	EASTERN WOOD-PEWEE
<i>SAYORNIS PHOEBE</i>	EASTERN PHOEBE
<i>MYIARCHUS CRINITUS</i>	GREAT CRESTED FLYCATCHER
<i>TYRANUS TYRANUS</i>	EASTERN KINGBIRD
HIRUNDINIDAE	SWALLOWS
<i>HIRUNDO RUSTICA</i>	BARN SWALLOW
CORVIDAE	JAYS, CROWS
<i>CYANOCITTA CRISTATA</i>	BLUE JAY
<i>CORVUS BRACHYRHYNCHOS</i>	AMERICAN CROW
<i>CORVUS OSSIFRAGUS</i>	FISH CROW
PARIDAE	TITMICE
<i>PARUS CAROLINENSIS</i>	CAROLINA CHICKADEE
<i>PARUS BICOLOR</i>	TUFTED TITMOUSE
SITTIDAE	NUTHATCHES
<i>SITTA CAROLINENSIS</i>	WHITE-BREASTED NUTHATCH
TROGLODYTIDAE	WRENS
<i>THRYOTHORUS LUDOVICIANUS</i>	CAROLINA WREN
<i>TROGLODYTES AEDON</i>	HOUSE WREN

Table C-1. (Continued)	
FAMILY: SUBFAMILY	COMMON NAME
MUSCICAPIDAE: SYLVIINAE	GNATCATCHERS, KINGLETS
<i>REGULUS CALENDULA</i>	RUBY-CROWNED KINGLET
<i>POLIOPTILA CAERULEA</i>	BLUE-GRAY GNATCATCHER
MUSCICAPIDAE: TURDINAE	THRUSHES, BLUEBIRDS
<i>SIALIA SIALIS</i>	EASTERN BLUEBIRD
<i>HYLOCICHLA MUSTELINA</i>	WOOD THRUSH
<i>TURDUS MIGRATORIUS</i>	AMERICAN ROBIN
MIMIDAE	MOCKINGBIRDS, THRASHERS
<i>DUMETELLA CAROLINENSIS</i>	GRAY CATBIRD
<i>MIMUS POLYGLOTTOS</i>	NORTHERN MOCKINGBIRD
<i>TOXOSTOMA RUFUM</i>	BROWN THRASHER
BOMBYCILLIDAE	WAXWINGS
<i>BOMBYCILLA CEDRORUM</i>	CEDAR WAXWING
STURNIDAE	STARLINGS
<i>STURNUS VULGARIS</i>	EUROPEAN STARLING
VIREONIDAE	VIREOS
<i>VIREO OLIVACEUS</i>	RED-EYED VIREO
EMBERIZIDAE: PARULINAE	WOOD WARBLERS
<i>DENDROICA CORONATA</i>	YELLOW-RUMPED WARBLER
<i>DENDROICA PENNSYLVANICA</i>	CHESTNUT-SIDED WARBLER
<i>DENDROICA PINUS</i>	PINE WARBLER
<i>GEOTHLYPIS TRICHAS</i>	COMMON YELLOWTHROAT
<i>SEIURUS NOVEBORACENSIS</i>	OVENBIRD
<i>VERMIVORA PINUS</i>	BLUE-WINGED WARBLER
EMBERIZIDAE: THRAUPINAE	TANAGERS
<i>PIRANGA OLIVACEA</i>	SCARLET TANAGER
EMBERIZIDAE: CARDINALINAE	CARDINAL, GROSBEAKS
<i>CARDINALIS CARDINALIS</i>	NORTHERN CARDINAL
<i>PASSERINA CYANEA</i>	INDIGO BUNTING

Table C-1. (Continued)	
FAMILY: SUBFAMILY	COMMON NAME
EMBERIZIDAE: EMBERIZINAE	NEW WORLD SPARROWS, BUNTINGS
<i>PIPILO ERYTHROPHthalmus</i>	RUFIOUS-SIDED TOWHEE
<i>SPIZELLA PASSERINA</i>	CHIPPING SPARROW
<i>SPIZELLA PUSILLA</i>	FIELD SPARROW
<i>MELOSPIZA MELODIA</i>	SONG SPARROW
<i>ZONOTRICHIA ALBICOLLIS</i>	WHITE-THROATED SPARROW
<i>JUNCO HYEMALIS</i>	DARK-EYED JUNCO
EMBERIZIDAE: ICTERINAE	BLACKBIRDS, ORIOLES
<i>AGELAIUS PHOENICEUS</i>	RED-WINGED BLACKBIRD
<i>QUISCALUS QUISCULA</i>	COMMON GRACKLE
<i>MOLOTHRUS ATER</i>	BROWN-HEADED COWBIRD
FRINGILLIDAE	FINCHES
<i>CARPODACUS MEXICANUS</i>	HOUSE FINCH
<i>CARDUELIS TRISTIS</i>	AMERICAN GOLDFINCH
PASSERIDAE	OLD WORLD SPARROWS
<i>PASSER DOMESTICUS</i>	HOUSE SPARROW

APPENDIX D

MAMMALS

NSA/FORT MEADE AREA

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Table D-1. Forty-six species of mammals potentially occurring in the general vicinity of the NSA exclusive use area at Fort George G. Meade, Anne Arundel County, Maryland (source: Webster et al. 1985).

FAMILY GENUS/SPECIES	COMMON NAME
DIDELPHIDAE	OPOSSUMS
<i>DIDELPHIS MARSUPIALIS</i>	OPOSSUM
SORICIDAE	SHREWS
<i>SOREX CINEREUS</i>	MASKED SHREW
<i>SOREX LONGIROSTRIS</i>	SOUTHEASTERN SHREW
<i>SOREX HOYI</i>	PYGMY SHREW
<i>CRYPTOTIS PARVA</i>	LEAST SHREW
<i>BLARINA BREVICAUDA</i>	NORTHERN SHORT-TAILED SHREW
TALPIDAE	MOLES
<i>CONDYLURA CRISTATA</i>	STAR-NOSED MOLE
<i>SCALOPUS AQUATICUS</i>	EASTERN MOLE
VESPERTILIONIDAE	PLAINNOSE BATS
<i>MYOTIS LUCIFUGUS</i>	LITTLE BROWN MYOTIS
<i>MYOTIS KEENII</i>	KEEN'S MYOTIS
<i>MYOTIS LEIBII</i>	SMALL-FOOTED MYOTIS
<i>LASIONYCTERIS NOCTIVAGANS</i>	SILVER-HAIRED BAT
<i>PIPISTRELLUS SUBFLAVUS</i>	EASTERN PIPISTRELLE
<i>EPTESICUS FUSCUS</i>	BIG BROWN BAT
<i>LASIURUS BOREALIS</i>	RED BAT
<i>LASIURUS CINEREUS</i>	HOARY BAT
<i>NYCTICEIUS HUMERALIS</i>	EVENING BAT
LEPORIDAE	HARES AND RABBITS
<i>SYLVILAGUS FLORIDANUS</i>	EASTERN COTTONTAIL
SCIURIDAE	SQUIRRELS
<i>TAMIAS STRIATUS</i>	EASTERN CHIPMUNK
<i>MARMOTA MONAX</i>	WOODCHUCK

Table D-1. (Continued)	
FAMILY	COMMON NAME
<i>SCIURUS CAROLINENSIS</i>	GRAY SQUIRREL
<i>SCIURUS NIGER</i>	FOX SQUIRREL
<i>TAMIASCIURUS HUDSONICUS</i>	RED SQUIRREL
<i>GLAUCOMYS VOLANS</i>	SOUTHERN FLYING SQUIRREL
CASTORIDAE	BEAVERS
<i>CASTOR CANADENSIS</i>	BEAVER
CRICETIDAE	MICE, RATS, VOLES AND LEMMINGS
<i>REITHRODONTOMYS HUMULIS</i>	EASTERN HARVEST MOUSE
<i>PEROMYSCUS LEUCOPUS</i>	WHITE-FOOTED MOUSE
<i>NEOTOMA FLORIDANA</i>	EASTERN WOODRAT
<i>MICROTUS PENNSYLVANICUS</i>	MEADOW VOLE
<i>MICROTUS PINETORUM</i>	WOODLAND VOLE
<i>ONDATRA ZIBETHICUS</i>	MUSKRAT
<i>SYNAPTOMYS COOPERI</i>	SOUTHERN BOG LEMMING
MURIDAE	OLD WORLD RATS AND MICE
<i>RATTUS RATTUS</i>	BLACK RAT
<i>RATTUS NORVEGICUS</i>	NORWAY RAT
<i>MUS MUSCULUS</i>	HOUSE MOUSE
ZAPODIDAE	JUMPING MICE
<i>ZAPUS HUDSONIUS</i>	MEADOW JUMPING MOUSE
CANIDAE	WOLVES AND FOXES
<i>VULPES VULPES</i>	RED FOX
<i>UROCYON CINEREOARGENTEUS</i>	GRAY FOX
<i>CANIS LATRANS</i>	COYOTE

Table D-1. (Continued)	
FAMILY	COMMON NAME
PROCYONIDAE	RACCOONS
<i>PROCYON LOTOR</i>	RACCOON
MUSTELIDAE	WEASELS, SKUNKS AND OTTERS
<i>MUSTELA FRENATA</i>	LONG-TAILED WEASEL
<i>MUSTELA VISON</i>	MINK
<i>MEPHITIS MEPHITIS</i>	STRIPED SKUNK
<i>LUTRA CANADENSIS</i>	RIVER OTTER
FELIDAE	CATS
<i>FELIS RUFUS</i>	BOBCAT
CERVIDAE	DEER
<i>ODOCOILEUS VIRGINIANUS</i>	WHITE-TAILED DEER

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