Final
Environmental Assessment

Fort George G. Meade

Construction and Operation of
Single and Unaccompanied Personnel Apartments

Prepared for

Fort George G. Meade, Maryland

Prepared by

Tetra Tech, Inc.

April 2012

ENVIRONMENTAL ASSESSMENT

CONSTRUCTION AND OPERATION OF SINGLE AND UNACCOMPANIED PERSONNEL APARTMENTS AT FORT GEORGE G. MEADE, MARYLAND

Prepared by

Tetra Tech, Inc.
Fairfax, VA

Approved by

Fort George G. Meade

EDWARD C. ROTHSTEIN
Colonel, Military Intelligence
Commanding

14 May 12
Date

ENVIRONMENTAL ASSESSMENT ORGANIZATION

This environmental assessment (EA) addresses the proposed action for Fort George G. Meade, Maryland to lease approximately 45 acres of land on the installation to Picerne Military Housing, LLC (Picerne) for 50 years and for Picerne to construct and operate unaccompanied personnel apartments on the leased land during the lease period. It has been developed in accordance with the National Environmental Policy Act and implementing regulations issued by the Council on Environmental Quality (Title 40 of the *Code of Federal Regulations* [CFR] Parts 1500–1508) and the Army (32 CFR Part 651). Its purpose is to inform decision makers and the public of the likely environmental and socioeconomic consequences of the Preferred Alternative and other alternatives.

An ***EXECUTIVE SUMMARY*** briefly describes the proposed action, environmental and socioeconomic consequences, and mitigation measures.

CONTENTS

SECTION 1.0: PURPOSE, NEED, AND SCOPE summarizes the purpose of and need for the proposed action and describes the scope of the environmental impact analysis process.

SECTION 2.0: PROPOSED ACTION AND ALTERNATIVES describes the proposed action to lease land and construct and operate unaccompanied personnel apartments on Fort Meade and examines alternatives to implementing the proposed action, including a Preferred Alternative and a No Action Alternative.

SECTION 3.0: AFFECTED ENVIRONMENT AND CONSEQUENCES describes the existing environmental and socioeconomic setting at Fort Meade as it pertains to the proposed action and identifies potential effects of implementing the Preferred Alternative and the No Action Alternative.

SECTION 4.0: FINDINGS summarizes the environmental and socioeconomic effects of implementing the Preferred Alternative and the No Action Alternative.

SECTION 5.0: REFERENCES AND PERSONS CONSULTED provides bibliographical information for cited sources and provides a listing of persons and agencies consulted during preparation of this EA.

SECTION 6.0: LIST OF PREPARERS identifies the persons who prepared the document.

SECTION 7.0: DISTRIBUTION LIST indicates recipients of this EA.

APPENDICES
- ***A*** Agency Coordination Documentation
- ***B*** Air Emissions Calculations and Record of Non-applicability
- ***C*** Economic Impact Forecast System Model
- ***D*** Solid Waste Calculations

An ***ACRONYMS AND ABBREVIATIONS*** list is provided after the Table of Contents.

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ENVIRONMENTAL ASSESSMENT

LEAD AGENCY: Fort George G. Meade, Anne Arundel County, Maryland

TITLE OF PROPOSED ACTION: Construction and Operation of Single and Unaccompanied Personnel Apartments at Fort George G. Meade, Maryland

AFFECTED JURISDICTION: Fort George G. Meade, Maryland

PREPARED BY: Tetra Tech, Inc., Fairfax, Virginia

APPROVED BY: Edward C. Rothstein, Colonel, Military Intelligence, Commanding, Fort George G. Meade, Maryland

ABSTRACT: This environmental assessment (EA) considers the proposed action for Fort George G. Meade, Maryland to lease approximately 45 acres of land on the installation to Picerne Military Housing, LLC (Picerne) for 50 years and for Picerne to construct and operate single and unaccompanied personnel apartments on the leased land during the lease period. The EA identifies, evaluates, and documents the effects of constructing and operating unaccompanied personnel apartments on leased land. This is the Preferred Alternative. A No Action Alternative is also evaluated. Implementation of the Preferred Alternative is not expected to result in significant environmental impacts. Preparation of an environmental impact statement, therefore, is not required and a finding of no significant impact (FNSI) will be published in accordance with 32 CFR Part 651, *Environmental Effects of Army Actions*, and the National Environmental Policy Act.

REVIEW COMMENT DEADLINE: The final EA and draft FNSI are available for review and comment for 30 days, beginning upon publication of a notice of availability in *The Baltimore Sun* (Baltimore, Maryland), the *Annapolis Capital* (Annapolis, Maryland), and *SoundOff!* (Fort Meade, Maryland). Copies of the EA and draft FNSI are available for review at the Medal of Honor Memorial Library, Fort Meade; and at the West County Area Library, 1325 Annapolis Road, Odenton, MD. Copies of the EA and draft FNSI also can be obtained by contacting Ms. Aimee Stafford at RCI Housing Division, Directorate of Public Works, 4463 Leonard Wood Avenue, Fort Meade, MD 20755, or by e-mail requests to aimee.n.stafford.civ@mail.mil. Comments on the EA and draft FNSI should be submitted to Ms. Stafford at the above mailing or e-mail address no later than the end of the 30-day review period.

Executive Summary

ES.1 BACKGROUND

This environmental assessment (EA) evaluates the proposed action at Fort George G. Meade to lease approximately 45 acres of land on the installation to Picerne Military Housing, LLC (Picerne) for 50 years and for Picerne to construct and operate single and unaccompanied apartments on the leased land during the lease period.

ES.2 PROPOSED ACTION

The Army proposes to lease land on Fort Meade to a private development entity (Picerne). The Army would grant Picerne a 50-year lease of approximately 45 acres of land on which Picerne would construct and operate new garden-style apartments and associated facilities for single and unaccompanied personnel. Picerne would operate and maintain the new facilities during the lease period. Picerne would demolish the existing lodging facilities on the parcel at appropriate times to support the project.

The new community would consist of approximately 40 one-bedroom and approximately 388 two-bedroom apartments, providing a total of approximately 816 bedrooms to be occupied by Junior Enlisted Service Members, of which there are approximately 1,200 living off-post. Picerne would manage the project through a project-specific entity, Meade Apartments, LLC, and would operate under a 50-year ground lease.

The proposed parcel for the project is at the northeast corner of the intersection of Cooper Avenue and Mapes Road; it is bounded on the north by Reece Road. The parcel is adjacent to the Post Exchange, commissary, and shoppette (east of the parcel), adjacent to the new Defense Information Systems Agency headquarters (west of the parcel), and south of the Potomac Place housing neighborhood. Eight buildings are now on the parcel. Approximately 21 acres of the parcel are wooded. An intermittent stream approximately 312 feet long runs through the northern part of the parcel. Development would occur on all 45 acres of the parcel over two phases of development, beginning in August 2012 and continuing through May 2016.

ES.3 PURPOSE AND NEED

The purpose of the proposed action is to provide additional on-post housing in the form of garden-style apartments for Junior Enlisted Service Members. This will help improve their quality of life by providing access to installation services and amenities. The proposed apartment community would bring displaced Junior Enlisted Service Members back on-post by providing an affordable, high-quality on-post housing option. Residents of the new apartments would enjoy the benefits of living in market-rate housing on-post and the additional security and convenience that on-post housing offers. The proposed action is needed because more than 50 percent of Junior Enlisted Service Members on Fort Meade are displaced and living off-post. The Installation has a barracks buyout plan that includes four projects of 1,152 total spaces for replacement of barracks spaces behind a secured fence line and one project for an additional 288 spaces to accommodate growth. None of these projects are funded. The proposed apartment community would allow the Army to bring many of these displaced Junior Enlisted Service Members back on-post resulting in enhanced quality of life, safety, unit integrity, and command and control, as well as reduced gate congestion, and commuting times for physical training and work requirements. Through the partnership with Picerne, the Army could also obtain the benefits of capital improvements and professional management that are available through the private sector's investment and experience.

ES.4 ALTERNATIVES

The Army identified two alternatives: the Preferred Alternative (proposed action) and the No Action Alternative. Under the Preferred Alternative, Fort Meade would lease land to Picerne and Picerne would construct and operate unaccompanied personnel apartments during a 50-year lease period. Picerne would operate and maintain the new facilities.

The Fort Meade Garrison and Picerne investigated the feasibility of alternative sites for development. Because of land constraints—including those imposed by the Base Realignment and Closure (BRAC) 2005 action at Fort Meade and those that could be imposed by the Enhanced Use Lease action—could result in an estimated combined population change of approximately 15,695 personnel at the installation and an estimated area of development totaling about 5.7 million square feet—and preferred uses for other available sites, all other sites were eliminated from further consideration for the proposed apartments land use. Accordingly, other sites are not evaluated in detail this EA.

A No Action Alternative also is evaluated in detail in this EA. The No Action Alternative is prescribed by Council on Environmental Quality regulations to serve as the baseline against which the Preferred Alternative and other alternatives are analyzed.

ES.5 ENVIRONMENTAL CONSEQUENCES

This EA evaluates potential long- and short-term effects on land use, aesthetic and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics (including environmental justice and protection of children), transportation, utilities, and hazardous and toxic substances.

Implementing the Preferred Alternative would be expected to result in a mixture of short- and long-term minor adverse and beneficial effects on the subject environmental resources and conditions.

For each resource area, the predicted effects from the Preferred Alternative and the No Action Alternative are summarized in Table ES-1.

Table ES-1.
Summary of potential environmental and socioeconomic consequences

	Environmental and socioeconomic effects	
Resource	**Preferred Alternative**	**No Action Alternative**
Land use	No effect	No effect
Aesthetic and visual resources	Long-term minor beneficial	No effect
Air quality	Short- and long-term minor adverse	No effect
Noise	Short-term minor adverse	No effect
Geology and Soils	Short-term minor adverse	No effect
Water resources	Long-term minor adverse	No effect
Biological resources	Long-term minor adverse	No effect
Cultural resources	No effect	No effect
Socioeconomics	Short- and long-term minor beneficial	Long-term minor adverse
Transportation	Short-term minor adverse Long-term minor beneficial	No effect
Utilities	Long-term minor adverse	No effect
Hazardous and toxic substances	No effect	No effect

ES.6 CONCLUSION

Implementing the Preferred Alternative would not be expected to result in significant environmental or socioeconomic effects. Issuance of a Finding of No Significant Impact would be appropriate, and an Environmental Impact Statement need not be prepared before implementing the Preferred Alternative.

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CONTENTS

APPENDICES

TABLES

FIGURES

ACRONYMS AND ABBREVIATIONS

ACM	asbestos containing material
ACP	access control point
ANSI	American National Standards Institute
AOI	Area of Interest
APE	area of potential effect
AQCR	Air-Quality Control Region
AST	aboveground storage tank
BAH	Basic Allowance for Housing
BG&E	Baltimore Gas & Electric Company
bgs	below ground surface
BMP	best management practice
BWI	Baltimore Washington Thurgood International Airport
C&D	construction and demolition
CEQ	Council on Environmental Quality
CFR	*Code of Federal Regulations*
CO	carbon monoxide
CO_2	carbon dioxide
COMAR	Code of Maryland Regulations
dB	decibel
dBA	A-weighted decibel
de minimis	of minimal importance
DISA	Defense Information Systems Agency
DNL	day-night sound level
DoD	Department of Defense
DPW	Directorate of Public Works
DPW-ED	Directorate of Public Works, Environmental Division
EA	environmental assessment
EBS	Environmental Baseline Survey
ECC	Environmental Consultants and Contractors, Inc.
ECP	Environmental Condition of Property
EIFS	Economic Impact Forecast System
EIS	environmental impact statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
FNSI	Finding of No Significant Impact
GHG	greenhouse gas
Hz	hertz
I-	Interstate
ICRMP	Integrated Cultural Resource Management Plan
IDP	initial development plan
IPMP	Integrated Pest Management Plan
IRP	Installation Restoration Program
kV	kilovolt
LBP	lead-based paint
LUST	leaking underground storage tank
L_{eq}	equivalent sound level
MARC	Maryland Area Regional Commuter
MCL	Maximum Contaminant Level

MDE	Maryland Department of the Environment
MDNR	Maryland Department of Natural Resources
MEC	munitions and explosives of concern
mgd	million gallons per day
MHPI	Military Housing Privatization Initiative
MMRP	Military Munitions Response Program
msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
P-	priority
PCB	polychlorinated biphenyls
PM_{10}	particulate matter
$PM_{2.5}$	fine particulate matter
POW	prisoner of war
PX	Post Exchange
RCI	Residential Communities Initiative
ROI	region of influence
RTV	rational threshold value
SMP	Site Management Plan
SO_2	sulfur dioxide
SO_X	oxides of sulfur
SWMU	Solid Waste Management Program
tpy	tons per year
U.S.C.	United States Code
UPH	Unaccompanied Personnel Housing
USACE	U.S. Army Corps of Engineers
UST	underground storage tank
VSI	visual site inspection
WMATA	Washington Metropolitan Area Transportation Authority
WTP	water treatment plant
WWTP	wastewater treatment plant
XRF	X-ray fluorescent

SECTION 1.0
PURPOSE, NEED, AND SCOPE

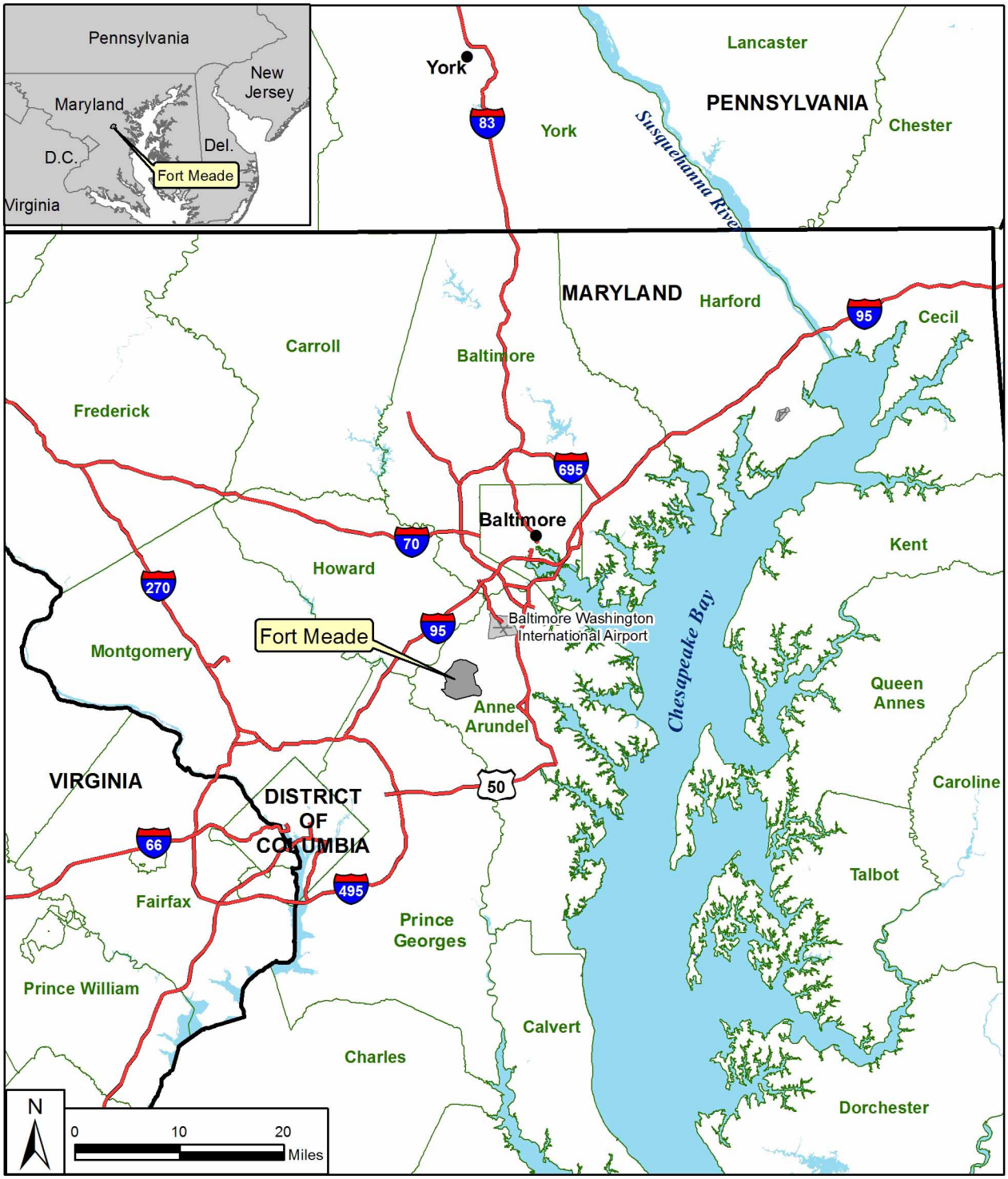
1.1 INTRODUCTION

Funding shortfalls over many years have impeded maintenance, repair, or replacement of residential facilities on military installations. In recognition of the problem, Congress enacted section 2801 of the 1996 Defense Authorization Act (Public Law 104-106, codified at Title 10 of the *United States Code* [U.S.C.] sections 2871-85), also known as the Military Housing Privatization Initiative (MHPI). The MHPI authorizes the Army to obtain private capital to leverage government dollars, make efficient use of limited resources, and use a variety of private sector approaches to build, renovate, and operate housing on military installations. Two initiatives undertaken by the Army under the MHPI are the unaccompanied personnel housing (UPH) program and the Residential Communities Initiative (RCI) program. Those programs provide for the privatization of UPH (the UPH program) and family housing (the RCI program) on military installations. The first RCI program family housing units were available in 2003 at Fort George G. Meade, Maryland (Fort Meade), through a partnership between the Army and Picerne Military Housing, LLC (Picerne).

The Army and Picerne now propose to partner again to provide privatized unaccompanied personnel apartments at Fort Meade (Figure 1-1). Picerne proposes to develop a garden-style-apartment, privatized community for single and unaccompanied personnel at Fort Meade. The community would consist of approximately 40 one-bedroom and approximately 388 two-bedroom apartments, providing a total of 816 bedrooms to be occupied by Junior Enlisted Service Members, of which there are approximately 1,200 living off-post. Picerne would manage the project through a project-specific entity, Meade Apartments, LLC, and would operate under a 50-year ground lease. This environmental assessment (EA) evaluates implementation of the proposed unaccompanied personnel apartments project at Fort Meade.

1.2 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the proposed action is to provide additional on-post housing in the form of garden-style apartments for Junior Enlisted Service Members. This will help improve their quality of life by providing access to installation services and amenities. The proposed apartment community would bring displaced Junior Enlisted Service Members back on-post by providing an affordable, high-quality on-post housing option. Residents of the new apartments would enjoy the benefits of living in market-rate housing on-post and the additional security and convenience that on-post housing offers. The proposed action is needed because more than 50 percent of Junior Enlisted Service Members on Fort Meade are displaced and living off-post. The Installation has a barracks buyout plan that includes four projects of 1,152 total spaces for replacement of barracks spaces behind a secured fence line and one project for an additional 288 spaces to accommodate growth. None of these projects are funded. The proposed apartment community would allow the Army to bring many of these displaced Junior Enlisted Service Members back on-post resulting in enhanced quality of life, safety, unit integrity, and command and control, as well as reduced gate congestion, and commuting times for physical training and work requirements. Through the partnership with Picerne, the Army could also obtain the benefits of capital improvements and professional management that are available through the private sector's investment and experience.



Location Map

Figure 1-1

1.3 SCOPE OF ANALYSIS

This EA has been developed in accordance with the National Environmental Policy Act (NEPA) of 1969 and implementing regulations issued by the Council on Environmental Quality (CEQ) and the Army.[1] An interdisciplinary team of scientists, planners, economists, engineers, archaeologists, lawyers, and military technicians reviewed the proposed action in light of existing conditions and has identified relevant beneficial and adverse effects associated with the proposed action. The purpose of the EA is to inform Army decision makers and the public of the likely environmental consequences of constructing unaccompanied personnel apartments at Fort Meade.

This EA focuses on evaluation of environmental effects that are reasonably foreseeable within the first 5 years of construction and operations, described in detail in Section 2.3. Potential environmental effects beyond 2017 would be speculative and are not analyzed in this EA.

1.4 PUBLIC INVOLVEMENT

The Army invites public participation in the NEPA process. Agencies, organizations, Native American tribes, and members of the public having a potential interest in the proposed action, including minority, low-income, and disadvantaged groups are urged to participate in the decision-making process.

If the EA concludes that the proposed action would not result in significant environmental effects, the Army may issue a draft Finding of No Significant Impact (FNSI). The Army will then observe a 30-day period during which agencies and the public may submit comments on the EA or draft FNSI. Upon consideration of any comments received from the public or agencies, the Army may approve the FNSI and implement the proposed action. If during the development of the EA it is determined that significant effects would be likely, the Army would mitigate the effects to below significance, issue a Notice of Intent to prepare an environmental impact statement, or not proceed with the action.

1.5 UPH PROGRAM PARTNERSHIP

The statutory basis for UPH programs is found in the MHPI legislation. The essence of the MHPI is that it comprehensively allows the Army to obtain access to private-sector financial and management resources for the construction, maintenance, management, renovation, replacement, rehabilitation, and development of housing. The Army has selected Picerne, its RCI partner, to carry out an unaccompanied personnel apartments action as permitted by the MHPI. The Army would provide a long-term lease for land underlying the unaccompanied personnel apartments. In return, the Army would obtain the benefit of modern facilities and services that equal the standards prevailing in the commercial sector.

1.6 ENVIRONMENTAL LAWS AND REGULATIONS

Army decisions that affect environmental resources and conditions occur within the framework of numerous laws, regulations, and Executive Orders (EOs). Some of those authorities prescribe standards for compliance. Others require specific planning and management actions to protect environmental values potentially affected by Army actions. Those authorities include the Clean Air Act, Clean Water Act, Noise Control Act, Endangered Species Act, National Historic Preservation Act, Archaeological Resources Protection Act, Resource Conservation and Recovery Act, Toxic Substances Control Act, EO 11988 (*Floodplain Management*), EO 11990 (*Protection of Wetlands*), EO 12088 (*Federal Compliance with Pollution Control Standards*), EO

[1] CEQ Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, Title 40 of the *Code of Federal Regulations* (CFR) Parts 1500–1508, and Environmental Analysis of Army Actions, 32 CFR Part 651.

12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*), EO 13045 (*Protection of Children from Environmental Health Risks and Safety Risks*), EO 13423 (*Strengthening Federal Environmental, Energy, and Transportation Management*), and EO 13514 (*Federal Leadership in Environmental, Energy, and Economic Performance*). Where useful to better understanding, key provisions of the statutes and EOs are described in more detail in the text of the EA. The legal authorities cited in this EA can be accessed at www.archives.gov.

SECTION 2.0
PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

The Army proposes to implement an unaccompanied personnel apartments project at Fort Meade. The Army would lease approximately 45 acres of partially developed land to Picerne, and Picerne would construct and operate unaccompanied personnel apartments. This section presents the proposed action and the No Action Alternative. It also identifies potential alternatives to the proposed action. The proposed action presented in Section 2.3 is the Army's Preferred Alternative.

2.2 THE NO ACTION ALTERNATIVE

Inclusion of the No Action Alternative, prescribed by CEQ regulations, serves as a baseline against which the impacts of the proposed action and alternatives can be evaluated. Under the No Action Alternative, the Army would not implement the unaccompanied personnel apartments project at Fort Meade. Fort Meade is the permanent duty station to approximately 2,200 Junior Enlisted Service Members, approximately 1,000 of whom reside in on-post barracks. The remaining approximately 1,200 Junior Enlisted Service Members receive a basic allowance for housing (BAH) and reside off-post. Under the No Action Alternative, that situation would not change and the opportunity to bring displaced Junior Enlisted Service Members back on-post would not exist. Overall quality of life would not improve and other potential benefits of the proposed action would not be realized. In addition, over time, it would be expected that funding shortfalls would result in a deteriorating condition of the existing facilities on Fort Meade, leading to a worsening quality of life for those Junior Enlisted Service Members living on-post.

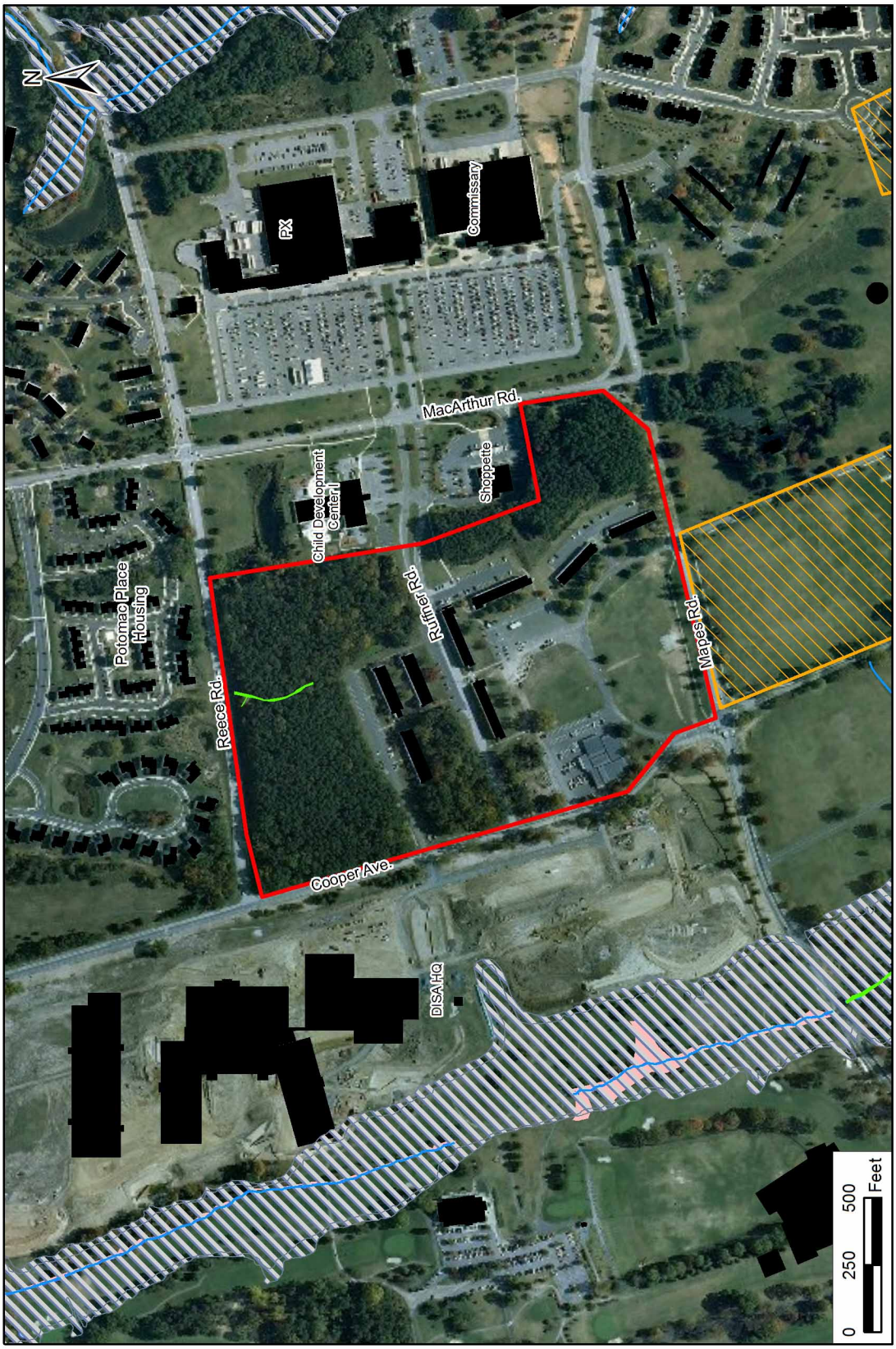
2.3 PROPOSED ACTION

Fort Meade proposes to enter into an agreement to lease land to Picerne and to authorize Picerne to construct and operate unaccompanied personnel apartments on the installation. The following details pertain.

Duration of lease. The grant of lease of land would extend for 50 years.

Location of site. Fort Meade would make available a parcel of land in the cantonment area. The parcel is a 45-acre tract at the northeast corner of the intersection of Cooper Avenue and Mapes Road; it is bounded on the north by Reece Road (Figure 2-1). The subject parcel is adjacent to the Post Exchange (PX), commissary, and shoppette (east of the parcel), adjacent to the new Defense Information Systems Agency (DISA) headquarters (west of the parcel), and south of the Potomac Place housing neighborhood. A parade field that is part of a historic district is south of the parcel across Mapes Road.

Description of site. The 45-acre parcel contains eight buildings constructed in the 1950s in the central and southern portions of the parcel. Areas surrounding the buildings are maintained lawns with many mature trees. Three wooded areas on the parcel cover about 21.6 acres of the 45-acre parcel. Dominant trees on the parcel include pitch pine, Virginia pine, and loblolly pine. There are no known wetlands on the parcel, but a stream channel measuring approximately 312 linear feet long leads from a culvert under Reece Road, through the northern wooded area on the parcel. The stream connects to a concrete-lined ditch that parallels the northernmost parking lot on the parcel and leads to Cooper Avenue. The parcel slopes gradually down from the north toward the southwest, with a total change of elevation of approximately 20 feet.



Site Map

Figure 2-1

Site plan. Picerne would construct up to 17 apartment buildings and amenities, including a 6,000-square-foot community clubhouse with a swimming pool, fitness center, media center, club room, landscaped barbeque areas, and gathering spaces. Development density would be 10 living units per acre. Existing trees and vegetation would be retained to the extent allowed by development constraints. Figure 2-2 provides a preliminary project site plan.

Construction scope. Picerne would construct and operate an unaccompanied personnel apartments complex for 816 Soldiers in grades E-1 through E-5 (Junior Enlisted Service Members). Picerne would provide the following facilities:

- Up to 17 buildings, each with 24 to 28 apartments and a mixture of one- and two-bedroom apartments, and each three stories high or of a three/four-story split design.
- Approximately 40 one-bedroom units and approximately 388 two-bedroom units; each bedroom would have a private bath.
- Approximately 1.5 parking spaces per bedroom; parking would include spaces for motorcyles; bicycle racks would be provided.
- A 6,000-square-foot community clubhouse and pool.
- Gathering areas (barbeque grills and seating).

The initial project development (IDP) period would last from August 2012 through May 2016. The land transfer from the Army to Picerne is anticipated to be completed by August 1, 2012. The first apartment building and community clubhouse would be completed within 13 months (by September 2013). Apartments would be made available for occupancy as each building is completed. All apartment buildings would be completed by late spring 2016. The apartments would meet applicable requirements of the Americans with Disabilities Act and force protection security requirements. The apartments would also be constructed to meet LEED Silver standards per the U.S. Green Building Council.

2.4 ALTERNATIVES TO THE PROPOSED ACTION

The Fort Meade Garrison and Picerne investigated the feasibility of alternative sites for development. Because of land constraints—including those already imposed by the Base Realignment and Closure 2005 action at Fort Meade and those that could be imposed by the Enhanced Use Lease action—could result in an estimated combined population change of approximately 15,695 personnel at the installation and an estimated area of development totaling about 5.7 million square feet (USACE Mobile District. 2007)—and preferred uses for other available sites, all other sites were eliminated from further consideration for the proposed apartments land use. Accordingly, other sites are not evaluated in detail this EA.

Concept Plan

Figure 2-2

Note: Preliminary concept drawing. May change before the project is finalized.

SECTION 3.0
AFFECTED ENVIRONMENT AND CONSEQUENCES

3.1 LAND USE

3.1.1 Affected Environment

Land use on Fort Meade is composed of operations, tenant agency, housing, community, school (Anne Arundel County), and open space. The parcel proposed for new unaccompanied personnel apartments is centrally located in the cantonment area and is mostly designated as housing land use. It has five active and three inactive lodging buildings on it. Wooded areas in the northern portion and southeastern corner of the parcel are designated as open space land use and are Forest Conservation Areas. The former golf course west of the unaccompanied personnel apartments parcel across Cooper Avenue has been converted to tenant agency/operations land use, and is now the site of the DISA headquarters complex. Community land use east of the subject parcel is the location of a Child Development Center, Post Exchange (PX), shoppette, and commissary. Housing land use (Potomac Place family housing) is north of the parcel across Reece Road. Open space land use (a parade field that is part of a historic district) is south of the subject parcel across Mapes Road (USACE Mobile District 2007).

3.1.2 Environmental Consequences

3.1.2.1 Proposed Action (Preferred Alternative)

No effects on land use would be expected. The current land use of the subject parcel is housing and open space, and the proposed action would change the land use of the entire parcel to housing. The density of housing on the parcel of land would increase as a result of implementing the proposed action, and open space areas on the parcel would be converted to housing land use; however, the parcel's use as housing would be compatible with all surrounding land uses. No land use incompatibilities, therefore, would be created by implementing the proposed action. Buildings would be constructed to meet force protection security requirements, and stand-off distances would be maintained as required for the proposed building occupancy within the Fort Meade cantonment area in compliance with Unified Facilities Criteria 4-010-01 *DoD Minimum Antiterrorism Standards for Buildings*. The apartment buildings would also be constructed to meet LEED Silver standards per the U.S. Green Building Council.

3.1.2.2 No Action Alternative

No effects on land use would be expected. The proposed unaccompanied personnel apartments action would not be implemented under the No Action Alternative; therefore the No Action Alternative would not result in any changes in land use.

3.2 AESTHETICS AND VISUAL RESOURCES

3.2.1 Affected Environment

The proposed unaccompanied personnel apartments site is in the Central Administrative Zone of Fort Meade, which contains a variety of support uses including operations and administration, housing and lodging, and community uses (USACE Mobile District 2007). The area surrounding the proposed site is substantially developed and an active area of the installation. The PX and commissary to the east, Mapes Road to the south, Cooper Avenue and the new DISA facility to the west, and Potomac Place family housing area to the north all provide a mixed atmosphere of business and residential activities.

3.2.2 Environmental Consequences

3.2.2.1 Proposed Action

Long-term minor beneficial effects would be expected from implementing the proposed action. The lodging buildings on the proposed site, three of which are unoccupied, would be replaced with modern facilities and parking areas, a community center, and upgraded landscaping. The overall atmosphere of the area would not be changed because the new unaccompanied personnel apartments would replace existing lodging facilities, but the area would have an enhanced visual appearance.

3.2.2.2 No Action Alternative

No effects on aesthetics would be expected. The proposed unaccompanied personnel apartments action would not be implemented under the No Action Alternative; therefore the No Action Alternative would not result in any changes in the aesthetics of the site.

3.3 AIR QUALITY

3.3.1 Affected Environment

The U.S. Environmental Protection Agency (EPA) Region 3 and the Maryland Department of the Environment (MDE) regulate air quality in Maryland. The Clean Air Act (42 U.S.C. 7401-7671q), as amended, gives EPA responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) that set acceptable concentration levels for six criteria pollutants: particulate matter (measured as both particulate matter [PM_{10}] and, fine particulate matter [$PM_{2.5}$]), sulfur dioxide (SO_2), carbon monoxide (CO), nitrous oxides (NO_X), ozone (O_3), and lead. Short-term NAAQS (1-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, while long-term NAAQS (annual averages) have been established for pollutants contributing to chronic health effects. Whereas each state has the authority to adopt standards stricter than those established under the federal program, Maryland has adopted the federal standards.

Federal regulations designate Air Quality Control Regions (AQCRs) in violation of the NAAQS as *nonattainment* areas. Federal regulations designate AQCRs with levels below the NAAQS as *attainment* areas. According to the severity of the pollution problem, nonattainment areas can be categorized as marginal, moderate, serious, severe, or extreme. Anne Arundel County (and therefore Fort Meade) is within the Metropolitan Baltimore Interstate AQCR (AQCR 115) (40 CFR 81.28). AQCR 115 is in the ozone transport region that includes 12 states and Washington, DC. EPA has designated Anne Arundel County as the following (USEPA 2011a):

- Moderate nonattainment for the 1997 8-hour O_3 NAAQS
- Nonattainment for the 1997 $PM_{2.5}$ NAAQS
- Attainment for all other criteria pollutants

Existing ambient air quality conditions near Fort Meade can be estimated from measurements conducted at air quality monitoring stations close to the installation. The closest monitoring stations to Fort Meade in Anne Arundel County are to the west near Glenn Burnie. The most recent available data (Table 3-1) describe the existing ambient air quality conditions at the installation.

Table 3-1.
Local ambient air quality for Anne Arundel County

Pollutant	Primary NAAQS[a]	Secondary NAAQS[a]	Monitored data[b]
CO			
8-Hour Maximum[c] (ppm)	9	None	(No Data)
1-Hour Maximum[c] (ppm)	35	None	(No Data)
NO_2			
Annual Arithmetic Mean (ppm)	0.053	0.053	(No Data)
O_3			
8-Hour Maximum[d] (ppm)	0.08	0.12	0.087
$PM_{2.5}$			
Annual Arithmetic Meane ($\mu g/m^3$)	15	15	13.5
24-Hour Maximumf ($\mu g/m^3$)	65	65	36.8
PM_{10}			
Annual Arithmetic Mean[g] ($\mu g/m^3$)	50	50	(No Data)
24-Hour Maximum[c] ($\mu g/m^3$)	150	150	(No Data)
SO_2			
Annual Arithmetic Mean (ppm)	0.03	None	(No Data)
24-Hour Maximum[c] (ppm)	0.14	None	(No Data)

Notes: NA = no data available; NO_2 = nitrogen dioxide; ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

a. Source: 40 CFR 50.1-50.12

b. Source: USEPA 2011b

c. Not to be exceeded more than once per year.

d. The 3-year average of the fourth highest daily maximum 8-hour average O_3 concentrations over each year must not exceed 0.08 ppm.

e. The 3-year average of the weighted annual mean $PM_{2.5}$ concentrations from must not exceed 15.0 $\mu g/m^3$.

f. The 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor must not exceed 65 $\mu g/m^3$.

g. The 3-year average of the weighted annual mean PM_{10} concentration at each monitor within an area must not exceed 50 $\mu g/m^3$.

Fort Meade maintains a Synthetic Minor Permit to Operate (MDE 2011). The permit requirements include annual periodic inventory for all significant stationary sources of air emissions and covers monitoring, record-keeping, and reporting requirements. Fort Meade's 2010 installation-wide air emissions for all significant stationary sources are tabulated below (Table 3-2).

Table 3-2.
Annual emissions for significant stationary sources at Fort Meade

Pollutant	Emissions (tons/year)
Volatile organic compounds (VOCs)	9.5
Nitrogen oxides (NO_X)	4.5
Carbon monoxide (CO)	4.1
Sulfur dioxide (SO_2)	0.1
Fine particulate matter (PM_{10})	0.1

Source: U.S. Army Fort Meade 2011c.

Greenhouse Gases and Climate Change. Greenhouse gases (GHGs) are components of the atmosphere that trap heat relatively near the surface of the earth and, therefore, contribute to the greenhouse effect and climate change. Most GHGs occur naturally in the atmosphere, but increases in their concentration result from human activities such as burning fossil fuels. Global temperatures are expected to continue to rise as human activities continue to add carbon dioxide (CO_2), methane, nitrous oxide, and other greenhouse (or heat-trapping) gases to the atmosphere.

Whether rainfall will increase or decrease remains difficult to project for specific regions (IPCC 2007; USEPA 2011c).

EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, outlines policies intended to ensure that federal agencies evaluate climate-change risks and vulnerabilities and to manage the short- and long-term effects of climate change on their operations and mission. The EO specifically requires the Army to measure, report, and reduce its GHG emissions from both direct and indirect activities. The Department of Defense (DoD) has committed to reduce GHG emissions from noncombat activities by 34 percent by 2020 (DOD 2010). In addition, the CEQ recently released draft guidance on when and how federal agencies should consider GHG emissions and climate change in NEPA analyses. The draft guidance includes a presumptive effects threshold of 27,563 tons per year of CO_2 equivalent emissions from a federal action (CEQ 2010).

3.3.2 Environmental Consequences

3.3.2.1 Proposed Action

Short- and long-term minor adverse effects on air quality would be expected. Implementing the proposed action could affect air quality through airborne dust and other pollutants generated during construction and by introducing new stationary sources of pollutants, such as heating boilers. Air quality impacts would be considered minor unless the emissions would be greater than the General Conformity Rule applicability threshold, exceed the GHG threshold in the draft CEQ guidance, or contribute to a violation of any federal, state, or local air regulation.

Construction emissions were estimated for fugitive dust, on- and off-road diesel equipment and vehicles, worker trips, architectural coatings, and paving off-gases. Operational emissions would primarily be from heating emissions for the buildings and resident vehicle trips. Notably, the increase in housing units would constitute a small net increase in operational emissions. The estimated emissions from the proposed action would be below the General Conformity Rule applicability thresholds (Table 3-3). Those effects would likely be minor.

Table 3-3.
Annual air emissions compared to applicability thresholds

Activity	Emissions (tons/year)						De minimis threshold	Would emissions equal/exceed *de minimis* levels?
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$		
Construction and Demolition	11.6	20.0	4.8	< 0.1	15.2	2.2	100	No
Operations	3.6	8.0	0.2	< 0.1	0.3	0.3		

Note: SO_x = oxides of sulfur, VOC = volatile organic compound

For analysis purposes, it was assumed that all construction would be compressed into a single 12-month period. Regardless of the ultimate implementation schedule, therefore, annual emission would be less than those shown herein. Small changes in the facilities siting, the ultimate design,

and moderate changes in the quantity and types of equipment used would not have a substantial influence on the emission estimates and would not change the determination under the General Conformity Rule or level of effects under NEPA. Detailed emission calculations and a Record of Non-Applicability are provided in Appendix B.

The proposed apartment buildings would be equipped with individual furnaces or boilers for heating. The stationary sources of air emissions could be subject to federal and state air permitting regulations, including New Source Review, Prevention of Significant Deterioration, National Emission Standards for Hazardous Air Pollutants, or New Source Performance Standards. Picerne would own, operate, and maintain the unaccompanied personnel apartment buildings on property leased by Fort Meade. In general, leased activities would not be considered under the direct control of Fort Meade.

Those leased activities would normally be considered tenants, and Picerne would need to perform an air quality regulatory analysis to determine if any Clean Air Act permitting is required for operating any sources of air emissions. Leased activities may be considered under common control if they also have a contract-for-service relationship to provide goods or services to a military controlling entity at that military installation. Because of the variety and complexity of leased and contract-for-service activities at Fort Meade, case-by-case determinations would be necessary to determine if the existing sources of emissions would remain on, or new sources would be added to, Fort Meade's Synthetic Minor Permit to Operate permit.

The Code of Maryland Regulations (COMAR) outlines precautions that would be required during the construction of the new facilities, such as control of fugitive dust. All contractors would comply fully with all federal, state, and local air regulations. All persons responsible for any operation, process, handling, transportation, or storage facility that could result in fugitive dust, would take reasonable precautions to prevent such dust from becoming airborne. Reasonable precautions might include the use of water to control dust from building demolition, construction, road grading, or land clearing.

In addition, best management practices (BMPs) would be required and implemented for activities associated with the proposed action. The construction would be accomplished in full compliance with current Maryland regulatory requirements, with compliant practices or products. Those requirements include the following:

- Visible emissions (COMAR 26.11.06.02)
- Asphalt paving operations (COMAR 26.11.11.02)
- Portable fuel containers (COMAR 26.11.13.07)
- Architectural coatings (COMAR 26.11.33.00)
- Consumer products (COMAR 26.11.32.00)

The above listing is not all-inclusive; the Army and any contractors would comply with all applicable air pollution control regulations. Besides those BMPs, no mitigation measures would be required for the proposed action.

Greenhouse Gases and Climate Change. Under the proposed action, all construction activities combined would generate approximately 1,766 tons of CO_2. An increase in GHG from operation of additional housing units would result. Regardless, the GHG emissions associated with the proposed action fall well below the CEQ threshold. By using new heating and cooling systems and centrally locating the housing units, Fort Meade would take steps to help the Army reach its GHG reduction goals in accordance with EO 13514.

3.3.2.2 No Action Alternative

No effects on ambient air-quality would result from implementing the No Action Alternative. No construction would be undertaken, and no new housing operations would take place. Ambient air-quality conditions would remain as described in Sections 3.3.1.

3.4 NOISE

3.4.1 Affected Environment

Sound is a physical phenomenon consisting of vibrations that travel through a medium, such as air, and are sensed by the human ear. Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise intrusive. Human response to noise varies depending on the type and characteristics of the noise distance between the noise source and the receptor, receptor sensitivity, and time of day. Noise is often generated by activities essential to a community's *quality of life*, such as construction or vehicular traffic.

Sound varies by both intensity and frequency. Sound pressure level, described in decibels (dB), is used to quantify sound intensity. The dB is a logarithmic unit that expresses the ratio of a sound pressure level to a standard reference level. Hertz (Hz) are used to quantify sound frequency. The human ear responds differently to different frequencies. *A-weighing*, measured in A-weighted decibels (dBA), approximates a frequency response expressing the perception of sound by humans. Sounds encountered in daily life and their dBA levels are provided in Table 3-4.

Table 3-4.
Common sounds and their levels

Outdoor	Sound level (dBA)	Indoor
Motorcycle	100	Subway train
Tractor	90	Garbage disposal
Noisy restaurant	85	Blender
Downtown (large city)	80	Ringing telephone
Freeway traffic	70	TV audio
Normal conversation	60	Sewing machine
Rainfall	50	Refrigerator
Quiet residential area	40	Library

Source: Harris 1998

The dBA noise metric describes steady noise levels, although very few noises are, in fact, constant. A-weighted Day-night Sound Level, therefore, was developed. Day-night sound level (DNL) is defined as the average sound energy in a 24-hour period with a 10-dB penalty added to the nighttime levels (10 p.m. to 7 a.m.). DNL is a useful descriptor for noise because it averages ongoing, yet intermittent noise, and it measures total sound energy over a 24-hour period. In addition, equivalent sound level (L_{eq}) is often used to describe the overall noise environment. L_{eq} is the average sound level in dB.

The Noise Control Act of 1972 (PL 92-574) directs federal agencies to comply with applicable federal, state, and local noise control regulations. In 1974 EPA provided information suggesting continuous and long-term noise levels in excess of DNL 65 dBA are normally unacceptable for noise-sensitive land uses such as residences, schools, churches, and hospitals.

Maryland's Environmental Noise Act of 1974 limits noise to the level that will protect the health, general welfare, and property of the people of the state. The state limits both the overall noise environment and the maximum allowable noise level for residential, industrial, and commercial areas (COMAR 26.02.03) (Tables 3-5 and 3-6). Construction and demolition activities are exempt from the limits outlined in Table 3-5 and 3-6 during the daytime hours. For construction and demolition activities, a person may not cause or permit noise levels that exceed 90 dBA during daytime hours (7 a.m. to 10 p.m.) or levels specified in Table 3-5 during nighttime hours (COMAR 26.02.03).

Table 3-5.
Maryland overall environmental noise standards

Zoning district	Level (dBA)	Measure
Industrial	70	$L_{eq}(24)$
Commercial	64	DNL
Residential	55	DNL

Source: COMAR 26.02.03

Table 3-6.
Maximum allowable noise level (dBA) for receiving land use categories

Day/night	Industrial	Commercial	Residential
Day	75	67	65
Night	75	62	55

Source: COMAR 26.02.03
Note: Daytime construction noise limits are 90 dBA for all land use categories.

Both on- and off-post individuals can be subjected to multiple sources of noise during the day including normal operation of heating, ventilation, and air conditioning systems, military unit physical training activities, lawn maintenance, snow removal, and general maintenance of streets and sidewalks. Other minor noise sources include traffic, aircraft over flights, and construction activities. Tipton Army Airfield is approximately 1.5 miles from the proposed unaccompanied personnel apartments. Existing noise levels (L_{eq} and DNL) were estimated for the surrounding areas using the techniques specified in the American National Standards Institute's *Quantities and Procedures for Description and Measurement of Environmental Sound Part 3: Short-term measurements with an observer present.* Parcels are in areas that would normally be considered normal suburban residential (ANSI 2003). Table 3-7 outlines the closest receptors to the construction and demolition activities.

3.4.2 Environmental Consequences

3.4.2.1 Proposed Action

Short-term minor adverse effects of noise on the environment would be expected. Short-term increases in noise would result from the use of construction equipment.

Table 3-7.
Estimated existing noise levels at preferred site

Location	Closest noise sensitive area			Estimated existing sound levels (dBA)			
	Distance	Direction	Type	Land use category	DNL	L_{eq} (Daytime)	L_{eq} (Nighttime)
Proposed Action Site	1,200 ft (335 m)	North	School	Noisy urban Residential	55	43	47
	140 ft (84 m)	North	Residential				

Source: ANSI 2003

Table 3-8 presents typical noise levels (dBA at 50 feet) that EPA has estimated for the main phases of outdoor construction. Individual pieces of construction equipment typically generate noise levels of 80 to 90 dBA at a distance of 50 feet. With multiple items of equipment operating concurrently, noise levels can be relatively high during daytime periods at locations within several hundred feet of active construction sites. The zone of relatively high construction noise typically extends to distances of 400 to 800 feet from the site of major equipment operations. Locations farther than 800 feet from construction sites seldom experience noteworthy levels of construction noise.

Table 3-8.
Noise levels associated with outdoor construction

Construction phase	L_{eq} (dBA)
Ground clearing	84
Excavation, grading	89
Foundations	78
Structural	85
Finishing	89

Source: USEPA 1971

Because of the temporary nature of proposed construction activities and the limited amount of noise that construction equipment would generate, this effect would be minor. Noise from renovation activities would be minimal and confined primarily to indoor areas. Limited truck and worker vehicle traffic might be audible at some nearby locations. These effects would be negligible.

No long-term increases in the overall noise environment (e.g., L_{eq}, A-weighted DNL) would be expected from implementing the proposed action. No military training activities, use of weaponry, demolitions, or aircraft operations would occur. No changes in the existing noise environment associated with these sources, therefore, would be expected.

3.4.2.2 No Action Alternative

No effects on the noise environment would result from implementing the No Action Alternative. No construction would be undertaken, and no new housing would be built. Noise conditions would remain as described in Sections 3.4.1.

3.5 GEOLOGY AND SOILS

3.5.1 Affected Environment

Fort Meade is in the Atlantic Coastal Plain Physiographic province. The region is underlain by a wedge-shaped mass of unconsolidated sediments that thickens to the southeast and overlies crystalline rock of Precambrian to early Cambrian age (USACE Mobile District 2007).

3.5.1.1 Topography

Fort Meade has approximately 210 feet of topographic relief. The installation property slopes gradually to the south and southwest from the highest point, 310 feet above mean sea level (msl), in the northernmost central portion of the installation to the lowest elevation, less than 100 feet, in the southwestern corner of Fort Meade along the Little Patuxent River. Slopes exceeding 10 percent are rare and occur primarily in pockets in the north-central and central parts of the installation and along stream corridors (USACE Mobile District 2007). The unaccompanied personnel apartments parcel also slopes gradually from the north toward the southwest. Along Reece Road the elevation is approximately 180 feet above msl, and the parcel slopes to approximately 160 feet above msl in its southwest corner. The woodlot at the corner of Mapes Road and MacArthur Road is on a slightly elevated area at about 200 feet above msl.

3.5.1.2 Soils

The majority of the land at Fort Meade is suitable for building (USACE Mobile District 2007). Most of the soil on Fort Meade is part of the Evesboro complex, which is a very deep, well-drained to excessively drained, sandy loam soil on uplands. Such soils are easily worked over a wide range of moisture content but are subject to erosion, particularly soil blowing, when their surface becomes dry and not covered by protective vegetation. The soils make good building sites (USACE Mobile District 2007). The characteristics of the soil types found on the subject parcel are summarized in Table 3-9.

3.5.1.3 Prime or Unique Farmland Soils

No soils on Fort Meade are classified as prime or unique farmland soils because no land in the installation is available for agricultural production (USACE Mobile District 2007).

3.5.1.4 Hydric Soils

The National Soils List for Anne Arundel County, Maryland, published by the U.S. Department of Agriculture Natural Resources Conservation Service, indicates that no mapped soils within the subject parcel are classified as hydric (Bowman Consulting 2011b).

3.5.2 Environmental Consequences

3.5.2.1 Proposed Action

Short-term minor adverse effects on soils would be expected from implementing the proposed action. Developing the parcel would involve removing protective vegetation and disturbing soils to the depth required for facility construction. The proposed action would comply with Maryland's regulatory program for sediment and erosion control at construction sites, which requires that erosion control BMPs be employed at all sites with disturbances of more than 5,000 square feet. Erosion and sedimentation controls would be in place during construction to control erosion and siltation effects on areas outside the construction site. An erosion and sediment control plan would be designed in accordance with MDE regulations as published in the draft *2010 Standards and Specifications for Soil Erosion and Sediment Control* (MDE 2010a) and with *Maryland Erosion and Sediment Control Guidelines for State and Federal Projects* (MDE 2004).

Table 3-9.
Soil characteristics on the subject parcel

Soil type	Depth to restrictive feature/ water table	Drainage class	Frequency of flooding/ ponding	Typical Profile	Limitation for dwellings with basements	Suscepti-bility to erosion	Runoff potential
EVC: Evesboro and Galestown soils, 5%–10% slopes	> 80 in. / > 80 in.	Excessively drained to somewhat excessively drained	None/none	Loamy sand	Not limited	Low	Low
PeB: Patapsco-Evesboro-Fort Mott complex, 0%–5% slopes	> 80 in./40 in. or more	Well drained to excessively drained	None/none	Loamy sand, sandy loam, and sand	Not limited	Low	Low
PgB: Patapsco-Fort Mott-Urban land complex, 0%–5% slopes	> 80 in./40 in. or more	Well drained to somewhat excessively drained	None/none	Loamy sand, sandy loam, and sand	Somewhat limited (because of shallow depth to saturated zone)	Low	Low
PgD—Patapsco-Fort Mott-Urban land complex, 5%–15% slopes	> 80 in./40 in. or more	Well-drained to somewhat excessively drained	None/none	Loamy sand, sandy loam, and sand	Somewhat limited (because of shallow depth to saturated zone)	Low	Low
Uz: Urban Land	10 in. or more / N/A	N/A	N/A	N/A	N/A	N/A	High

The site would be designed to reduce to the maximum extent possible transporting excess soils off the site, and the parcel would be revegetated after each stage of construction was completed. Eventually the parcel would return to a pre-construction, minimal erosion state. No effects on the parcel's underlying geology or general topography would be expected from implementing the proposed action.

3.5.2.2 No Action Alternative

No effects on geology, topography, or soils would result from implementing the No Action Alternative. No construction would be undertaken, and no new housing would be built. No changes in the site's geology, topography, or soils would result.

3.6 WATER RESOURCES

3.6 1 Affected Environment

3.6.1.1 Surface Water

The unaccompanied personnel apartments parcel is in the Little Patuxent River subdrainage. Midway Branch, which drains most of the middle and western portions of Fort Meade, is the primary tributary of the Little Patuxent River near the subject parcel. It runs north to south west of Cooper Avenue. A stream channel measuring approximately 312 linear feet long on the subject parcel leads from a stormwater detention pond north of Reece Road in the Potomac Place family housing area through a culvert under Reece Road, through the northern wooded area on the parcel, and to a concrete-lined ditch that parallels the northernmost parking lot on the parcel and

leads to Cooper Avenue (Figure 2-1). The stream is identified as being intermittent (a stream with some natural base flow) (Bowman Consulting 2011a). Another concrete ditch parallels Cooper Avenue in the northwestern portion of the parcel. Information on wetlands on the parcel is provided in the EA in section 3.7.

3.6.1.2 Groundwater

Three aquifers underlie Fort Meade, the lowest of which, the Patuxent Aquifer with a thickness of 200–400 feet below the installation, provides potable water for the installation. The primary sources of potable water at Fort Meade are six groundwater wells on the south side of the installation. Fort Meade complies with standards in the Safe Drinking Water Act and COMAR. Drinking water is tested according to permit requirements (USACE Mobile District 2007).

3.6.1.3 Floodplains

No delineated 100-year floodplain areas are within the boundaries of the unaccompanied personnel apartments parcel (USACE Mobile District 2007).

3.6.1.4 Coastal Zone

Fort Meade is entirely within Maryland's Coastal Zone Management Program area, which includes the Chesapeake Bay. The streams and their tributaries on Fort Meade eventually flow to the Chesapeake Bay. MDE regulates activities proposed within Maryland's Coastal Management Zone through federal consistency requirements. Federal agencies are required to determine whether their activities are reasonably likely to affect any coastal use or resource and to conduct such activities in a manner that is consistent to the maximum extent practicable with the goals and objectives of Maryland's Coastal Zone Management Program.

3.6.2 Environmental Consequences

3.6.2.1 Proposed Action

Long-term minor adverse effects on surface waters would be expected from implementing the proposed action. Potential effects associated with developing the unaccompanied personnel apartments, should erosion controls fail, include sediment-laden stormwater runoff from the site and minor quantities of contamination associated with construction equipment use in stormwater runoff during times of heavy rain. Contaminants could infiltrate soils and percolate to groundwater. No effects on Maryland's coastal zone, or floodplains would be expected.

The construction phase of the project would require coverage under the Maryland General Permit for Stormwater Associated with Construction Activity, based on EPA's National Pollutant Discharge Elimination System (NPDES). Construction activities would comply with the *Maryland Erosion and Sediment Control Guidelines for State and Federal Projects* (MDE 2004) and the *Maryland Stormwater Management Guidelines for State and Federal Projects* (MDE 2010b) to avoid and minimize erosion at the construction site and sediment runoff in the vicinity of the proposed construction site. A stormwater management plan and system meeting MDE environmental site design standards would ensure that stormwater migrating offsite is within acceptable volumes both during and after construction. Measures necessary to prevent sediment laden water from leaving the site would be implemented. As an example, some measures and requirements for the redevelopment of property include reducing existing impervious area within the limits of disturbance by 50 percent and implementing Environmental Site Design to the maximum extent possible to provide water quality treatment for at least 50 percent of the existing impervious area within the disturbance.

Disturbance of the stream on the northern part of the parcel could also require permitting under MDE's Nontidal Wetlands regulations. It is anticipated that the entire length of the stream would be impacted in some way by the proposed project, though methods to reduce the amount of impact will be determined during final site design and layout and in consultation with MDE and the U.S. Army Corps of Engineers. A Jurisdictional Permit Application/wetlands permit for stream impacts will be submitted to MDE and the U.S. Army Corps of Engineers for review and approval. The Coastal Zone Federal Consistency Determination statement will be covered and included in the permit language and approval from MDE. Any impacts to the potential intermittent stream that cannot be avoided will be permitted in accordance with state and federal law.

3.6.2.2 No Action Alternative

No effects on water resources would result from implementing the No Action Alternative. No construction activities would occur under the No Action Alternative.

3.7 BIOLOGICAL RESOURCES

3.7.1 Affected Environment

3.7.1.1 Vegetation

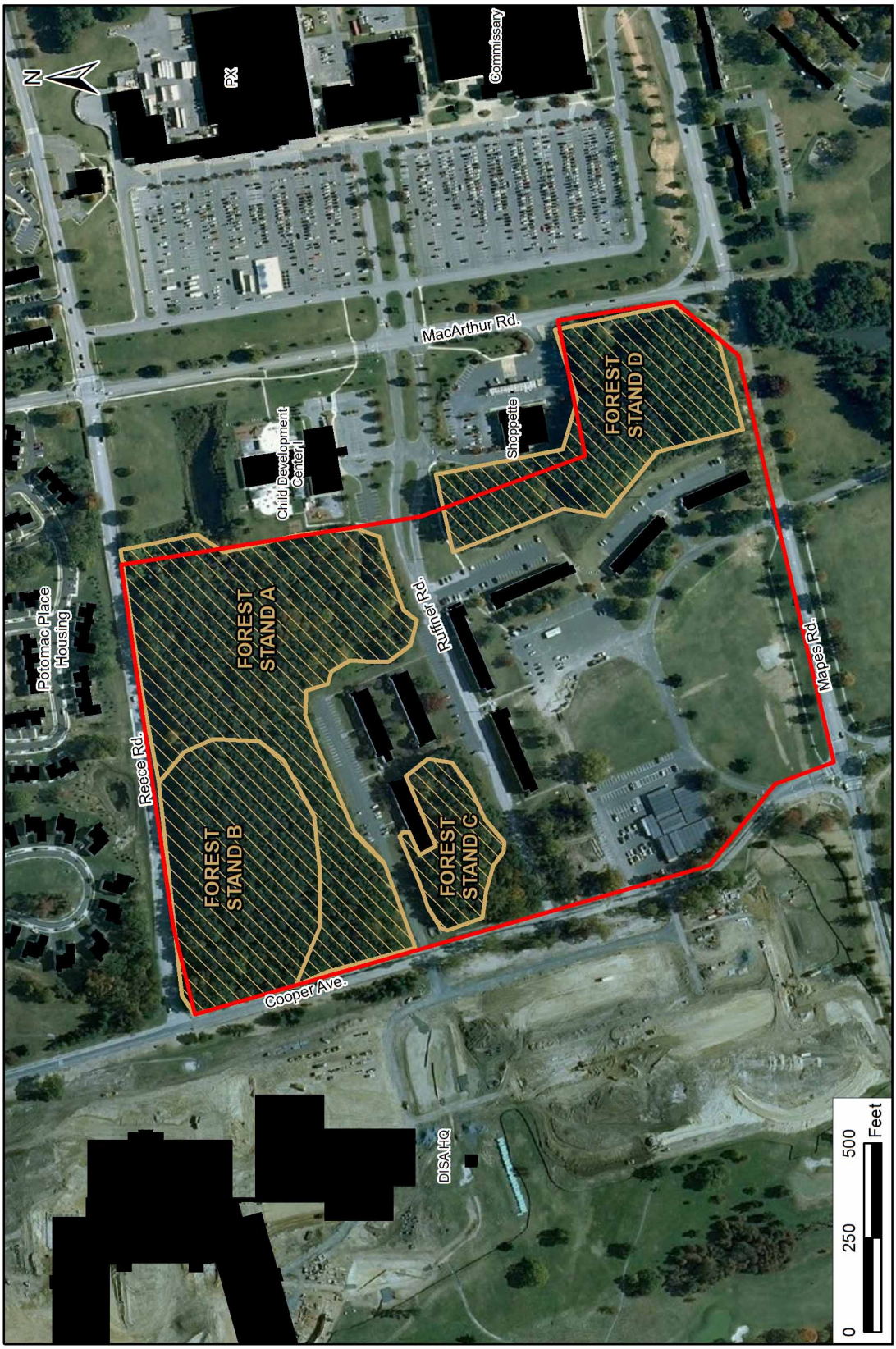
Vegetative cover on the unaccompanied personnel apartments parcel consists of wooded land and developed areas with mowed lawns. Three wooded areas on the parcel compose about 21.6 acres of the 45-acre parcel. A forest stand delineation investigation was conducted on the subject parcel in November 2011 (Bowman Consulting Group 2011b). The wooded areas were delineated into four forest stands (Figure 3-1). Details of the stands' characteristics are provided in Table 3-10. Fort Meade has more than 1,500 acres of forest land (USACE Mobile District 2007).

Fort Meade has an established Tree Management Policy that formalizes tree management and a policy for tree replacement from any activity that would cause the death or destruction of or lead to the removal of existing trees. Any person or activity that adversely affects desirably located trees would be responsible for replacing trees at their cost. This policy addresses preservation of existing dominant trees and mitigation for planting new trees (USASMDC 2011).

Fort Meade complies with the Maryland Forest Conservation Act to the maximum extent practicable and manages its Forest Conservation Program in agreement with the Maryland Department of Natural Resources (MDNR). The installation supports Army, federal, state, and local laws, regulations, policies, and initiatives to the fullest extent possible (USACE Mobile District 2007). The northern wooded area along Reece Road (forest stands A and B) and the southeastern wooded area north of Mapes Road (forest stand D) on the subject parcel are designated as Forest Conservation Areas by Fort Meade (USACE Mobile District 2007). Under the Maryland Forest Conservation Act, 20 percent of forest conservation areas must be preserved as Forest Conservation Mitigation Areas to mitigate project effects.

3.7.1.2 Wildlife

Wildlife species found on Fort Meade are typical of those found in urban-suburban areas. White-tail deer and groundhogs occur on the installation. Other mammals include gray squirrel (*Sciurus carolinensis*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), eastern chipmunk (*Tamias striatus*), field mouse and vole (*Microtus* sp.), mole (*Scalopus aquaticus*), and fox (*Vulpes vulpes*) (USACE Mobile District 2007).



Forest Stands

Figure 3-1

Table 3-10.
Vegetative characteristics of forest stands on the subject parcel

	Stand A	Stand B	Stand C	Stand D
Location	NE corner of parcel	NW corner of parcel	S of Ruffner Road	SE corner of parcel
Size	9.67 acres	5.18 acres	1.99 acres	4.76 acres
Dominant species	Red maple, pitch pine, Virginia pine	Pitch pine, Virginia pine, swamp white oak	Red maple, sassafras	Loblolly pine
Subdominant species	American holly, willow oak, cherry, sassafras, and beech, pin oak	Sassafras, red maple, southern red oak	Swamp white oak, willow oak, red oak, tulip poplar, loblolly pine	Southern red oak, sassafras, swamp oak, willow oak, red maple
Common tree size	2–6 inches (range 2–20+ inches)	2–6 inches (range 2–30+ inches)	3–20 inches	12–20 inches
Specimen trees	30-inch and 35-inch southern red oaks, 33.5-inch northern red oak	34-inch and 36.5-inch southern red oaks	33-inch, triple trunk red maple	None
Common understory species	Viburnum, Devils walking stick, lowbush blueberry	Spicebush, Devil's walking stick, lowbush blueberry	Sassafras, swamp oak, tulip poplar	Saplings of overstory species
Herbaceous species	Poison ivy, Virginia creeper, greenbriar	Greenbriar, grape vines, Virginia creeper	Honeysuckle, multiflora rose, spice bush, poison ivy, strawberry	Lowbush blueberry

Source: Bowman Consulting Group 2011b, Fort Meade DPW 2012.
Note: All tree sizes are at diameter breast height (DBH).
P = Priority ranking of dominant tree species (see below).

Birds common to the installation are limited to those species that have adapted to an urban-suburban habitat, such as American robin (*Turdus migratorius*), catbird (*Dumetella carolinensis*), mockingbird (*Mimus polyglyottos*), Carolina wren (*Thryothorus ludovicianus*), downy woodpecker (*Picoides pubescens*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), and song sparrow (*Melospiza melodia*) (USACE Mobile District 2007).

Aquatic habitat associated with the unaccompanied personnel apartments parcel is limited to the potential intermittent stream that leads from the stormwater detention pond north of Reece Road in the Potomac Place family housing area to a concrete-lined ditch that parallels the northernmost parking lot on the parcel.

3.7.1.3 Threatened and Endangered Species

Except for occasional transient individuals, such as migrating birds, no federally listed or proposed endangered or threatened species are known to occur on Fort Meade (USASMDC 2011). Rare, threatened and endangered species habitat searches performed in 1993–1994 (Eco-Science Professionals and C.A. Davis 1994) and in 2001 (Eco-Science Professionals 2001) as well as a 2009 Flora and Fauna Survey (USACE Baltimore District 2009) did not identify federally listed endangered or threatened species on Fort Meade. Fort Meade voluntarily maintains four habitat protection areas on the installation. Habitat protection areas are Army-designated areas which are desirable to maintain as natural areas and may have supported state threatened or endangered species, primarily vegetation. Development within these areas, although not preferable, is not precluded. No habitat protection areas are on the subject parcel.

In accordance with the requirements of the Endangered Species Act, agency coordination with the U.S. Fish and Wildlife Service and MDNR's Natural Heritage Program to identify state and federal listed species is being conducted. MDNR responded to a request for information on December 8, 2011, stating that it has no records of state or federal listed species within the boundaries of the subject parcel (Appendix A).

3.7.1.4 Wetlands

No wetlands are on the subject parcel. A wetland delineation survey was conducted on the parcel by Bowman Consulting Group in 2011, and the surveyors concluded that no nontidal wetlands are within the boundaries of the proposed parcel. The survey results will be forwarded to Maryland Department of the Environment and the U.S. Army Corps of Engineers for verification (Bowman Consulting Group 2011a).

3.7.2 Environmental Consequences

3.7.2.1 Proposed Action

Long-term minor adverse effects on biological resources would be expected from implementing the proposed action. Construction of the unaccompanied personnel apartments and associated structures on the proposed parcel would require clearing most of the parcel of vegetation, including much of the 21.6 acres of wooded areas. The development would eliminate much of the vegetation on the parcel and much of the wildlife that occupies it would likely move to other unimproved areas on the installation. After development is completed, disturbed areas would be revegetated with lawns, trees, shrubs, and some specimen trees that are on the parcel would be left uncut. The landscaping and mature trees left on the parcel would create an environment for urban-friendly species.

Picerne would be responsible for coordinating with Fort Meade DPW to replant trees on the installation or at a location acceptable to the installation and MDNR in compliance with the installation's Tree Management Policy and to ensure compliance with the Maryland Forest Conservation Act and the Fort Meade Forest Conservation Program. All removal of reforestation areas and previously recorded Forest Conservation Act areas will be done in accordance with the current Forest Conservation Act and Fort Meade Tree Management Policy. Structurally sound specimen trees will be preserved to the maximum extent practical. Tree preservation practices will be incorporated into construction plans to minimize damage to any trees that are to be preserved. Native plants will be used when re-landscaping the property after construction. Picerne has established a forest mitigation bank that might be used to address compliance with the Fort Meade Tree Management Policy. Final determination of how compliance will be met will be determined at a later date. The fair market value of the forest products removed because of the proposed action will be deposited in the Army Forestry Account to support Army forestry programs.

No effects on wetlands would be expected because none are on the proposed site. If the USACE determines that wetlands are on the parcel, then a Clean Water Act Section 404 permit will be obtained and any required mitigation measures in the permit will be complied with. The action would be permitted in accordance with all applicable state and federal laws. No effects on sensitive species would be expected because it is doubtful that any are found on the site.

3.7.2.2 No Action Alternative

No effects on biological resources would result from implementing the No Action Alternative. No construction activities would occur under the No Action Alternative.

3.8 CULTURAL RESOURCES

Cultural resources that were assessed are grouped in three general categories: archaeological resources, architectural resources, and Native American resources. Section 106 of the National Historic Preservation Act ensures that federal agencies consider historic properties—defined as any prehistoric or historic district, site, building, structure, or object eligible for inclusion in the National Register of Historic Places (NRHP)—in their proposed programs, projects, and actions before initiation, and allow the Advisory Council on Historic Preservation an opportunity to comment. Under that process, the federal agency evaluates the NRHP eligibility of resources in the proposed undertakings' area of potential effect (APE) and assesses the possible effects of the proposed undertaking on historic resources in consultation with the State Historic Preservation Office and other parties. The APE is defined as the geographic area(s) "within which an undertaking may directly or indirectly cause alterations in the character of use of historic properties, if any such properties exist." Under section 110 of the National Historic Preservation Act, federal agencies are required to establish programs to inventory and nominate cultural resources under their purview to the NRHP.

Cultural resources at Fort Meade are managed according to the 2006 Fort Meade Integrated Cultural Resources Management Plan (ICRMP) (USACE Baltimore District 2006). (A draft 2011 ICRMP is under review.) The ICRMP provides guidelines and procedures to enable Fort Meade to meet its legal responsibilities pertaining to cultural resources and includes processes for internal consultation and coordination with installation directorates and divisions; the ongoing identification and protection of archaeological and architectural resources and historic landscapes; external consultation and coordination with non-installation regulatory agencies and other interested parties; and implementation of standard operating procedures for cultural resources actions (USACE Baltimore District 2006).

3.8.1 Affected Environment

Numerous cultural resources investigations have been conducted at Fort Meade; however, before developing and implementing the installation's ICRMP in 1994, cultural resources investigations were conducted as needed. Part of the ICRMP was to develop an archaeological sensitivity model that designated areas of high and low potential for containing archaeological sites, taking into consideration the extent of modern disturbances. The ICRMP recommended 2,710.6 acres for archaeological survey and identified 1,852.9 acres where no additional surveys were recommended. Subsequent testing of the model on 407 acres identified six archaeological sites (USACE Baltimore District 2006). In 1995 an additional 2,210 acres were surveyed, which resulted in the documentation of 29 archaeological sites (USACE Mobile District 2007).

To date, 40 archaeological sites have been documented at Fort Meade. Of those, 19 contain prehistoric cultural components, 11 contain historic cultural components, 3 contain both historic and prehistoric components, and 7 are historic cemeteries. All the prehistoric sites are along upland terraces or ridges next to tributaries of the Little Patuxent River or Severn Run. NRHP eligibility status for all 40 sites has been determinate through consultation with the Maryland Historic Trust, which serves as Maryland's State Historic Preservation Office. One site (18AN1240) has been determined eligible for listing in the NRHP under Criterion D. The site consists of a Late Archaic subperiod base camp containing stratified cultural deposits. The remaining 39 sites have been determined not eligible for listing in the NRHP.

The APE for archaeological resources for the proposed action consists of approximately 45 acres at the northeast corner of the intersection of Cooper Avenue and Mapes Road in the cantonment area. No known NRHP eligible archaeological resources are within the APE.

While developing and implementing the Fort Meade ICRMP, a systematic inventory and assessment conducted of all architectural resources constructed before 1954 was evaluated for NRHP eligibility (USACE Baltimore District 2006). The survey documented 501 buildings. Among those, 23 World War I-era and 62 World War II-era buildings were recommended for additional investigation to determine NRHP eligibility; the remaining 416 buildings were determined ineligible. A Phase II architectural survey of those buildings was conducted in 1996. When preparing the updated 2001 ICRMP, the U.S. Army Corps of Engineers evaluated all pre-1960 Cold War-era buildings. The results from the architectural surveys were submitted to the Maryland Historic Trust for review and concurrence.

No buildings or structures at Fort Meade are listed in the NRHP; although the Fort Meade Historic District and a water treatment plant (WTP) (Building 8688) have been determined eligible for listing (USACE Baltimore District 2006; USACE Mobile District 2007). The Fort Meade Historic District contains 13 contributing Georgian Revival brick buildings constructed between 1928 and 1940 within the planned portion of the original post. The district originally consisted of 132 buildings and structures; however, with the privatization of several military housing units, many of the contributing elements of the original district are no longer under Army jurisdiction. The WTP (Building 8688), was built in 1941 in the Art Modern style. The building is constructed of concrete and brick and retains most of its original architectural features.

Additionally, three stone culverts (Llewellyn Avenue Culvert, Redwood Avenue Culvert, and Leonard Wood Avenue Culvert) built on the installation by German prisoners of war (POWs) between 1944 and 1946 were evaluated for NRHP eligibility. During World War II, many POWs were detained in Maryland and, because of labor shortages, put to work in agriculture and industry. During their detainment at Fort Meade, German POWs operated the post laundry and were used as laborers in constructing the three culverts. The evaluation found that the stone culverts are historically significant for their association with German POWs in Maryland during World War II. As such, the three culverts were recommended as eligible for listing in the NRHP (USACE Baltimore District 2006).

Last, to assess potential visual effects on nearby or adjacent historic buildings, a visual APE was established and all architectural resources within an approximate 0.25-mile radius of the preferred site were identified. No architectural resources occur within the visual APE. While the Fort Meade Historic District's northern boundary abuts the 45-acre preferred site under the proposed plan, the closest architectural resource, Van Deman Hall (Building 4552), is approximately 0.34 mile to the southeast. Van Deman Hall, a contributing element of the Fort Meade Historic District, is one of three large barracks buildings constructed between 1929 and 1940. The barracks complex also includes Buildings 4553 (Tallmadge Hall) and 4554 (Hale Hall). Constructed in 1940 as a 250-man barracks, it is now used as an administrative building. It has Georgian Colonial Revival design elements. Building 4552 is significant under the National Register Areas of Significance for architecture and military history. Building 4554 was damaged by fire in 2007 and remains vacant pending repairs or renovation for continued administrative use.

No known traditional cultural properties or Native American sacred sites occur within or near the preferred site. Additionally, no traditional cultural properties or Native American sacred sites have been recorded at Fort Meade. While no federally recognized Indian tribes are present in Maryland, federally recognized tribes elsewhere in the United States are believed to have a historical affiliation. The ICRMP initiates consultation in accordance with the American Indian Religion Freedom Act and the Native American Graves Protection and Repatriation Act. To date, no tribe has expressed interest in FGGM projects.

3.8.2 Environmental Consequences

3.8.2.1 Proposed Action

No adverse effects would be expected on the sole NRHP-eligible archaeological site at Fort Meade from implementing the proposed action. There would be no effects on any Native American resources or sacred sites. The proposed action could have minor temporary indirect effects on architectural resources eligible for the NRHP because the site is adjacent to the Fort Meade Historic District. Impacts would be expected only during active construction and would be limited to minor effects on setting and viewshed. When construction is completed, the effects would be nonexistent.

3.8.2.2 No Action Alternative

No effects on cultural resources would be expected from implementing the No Action Alternative. No ground disturbance or viewshed alterations would occur under the No Action Alternative.

3.9 SOCIOECONOMICS

3.9.1 Affected Environment

This section describes the socioeconomic region of influence (ROI). An ROI is a geographic area selected as a basis on which social and economic impacts of project alternatives are analyzed. The ROI for the socioeconomic environment is defined as Anne Arundel, Baltimore, and Howard counties, Maryland, and Baltimore City, Maryland. Socioeconomic data for Maryland and the United States are presented for comparative purposes.

Employment and Industry. The ROI has a labor force of about 1.1 million people. The ROI labor force increased 4 percent between 2000 and 2010, lower than the Maryland state and national labor force growth rates of 6 percent and 8 percent, respectively. The ROI 2010 annual unemployment rate was 8 percent, which is the same as the Maryland unemployment rate but lower than the national unemployment rate of 10 percent (BLS 2011). The primary sources of ROI employment were government and government enterprises; health care and social assistance; professional, scientific, and technical services; and retail trade. Together, those industry sectors accounted for almost 50 percent of regional employment (BEA 2011). Fort Meade is a major contributor to the regional and state economies, with more than $9 billion per year in funding. Fort Meade is Maryland's largest employer and has the fourth largest workforce of any Army installation in the continental United States. There are approximately 57,000 people working on Fort Meade; of this, approximately 12,000 are military; approximately 30,000 are DoD civilian; and approximately 15,000 are contractors (Fort Meade PAO 2012).

Income. ROI income levels were higher than state and national income levels. The ROI per capita personal income was $35,266, which is 103 percent of the Maryland state level per capita personal income of $34,389 and 134 percent of the national per capita income of $26,409. The ROI median household income of $72,603 was 105 percent of the Maryland state median household income of $69,272 and 145 percent of the national median household income of $50,221 (U.S. Census Bureau 2011a).

Population. The ROI's 2010 population was about 2,250,000, an increase of approximately 107,000 persons since 2000. The ROI's population growth of 5 percent was lower than the Maryland and national population growth of 9 percent and 10 percent, respectively. Within the ROI, the Anne Arundel, Howard, and Baltimore county populations grew, with Howard County having the highest growth of 16 percent. Baltimore City's population declined by 5 percent (U.S.

Census Bureau 2011b, 2011c). There are about 10,500 people living on Fort Meade, which includes Soldiers and their dependents (Fort Meade PAO 2012).

Housing. Fort Meade's permanent housing includes privatized family housing, barracks for junior enlisted soldiers, and training barracks. There are eight centralized barracks buildings on the main Fort Meade Campus that include 564 spaces. There are an additional five buildings on the NSA campus that have 636 paces. All barracks spaces are for E1-E5 and house all services to include the Warrior in Transition Unit. The training barracks consist of seven buildings that have 672 spaces. Service Members E6 and above automatically receive a basic allowance for housing. The Air Force provides housing allowance starting at the E5 rank. Geographical bachelors are no longer entitled to UPH. The Fort Meade Housing Division oversees the operation, maintenance, and repair of all UPH. Fort Meade family housing was privatized in 2002. Although there are currently over 2,800 homes, the end state is 2,627 homes to house all ranks.

Fort Meade has a shortfall of UPH. The shortfall of on-post UPH developed as a result of lack of funding, mission growth and large-scale relocation of Service Members to Fort Meade because of other Army actions (Base Realignment and Closure, Global Defense Posture Realignment and Army Modular Force Initiatives).

Emergency services. The Fort Meade Directorate of Emergency Services oversees police and fire protection for the installation. The Police Services Division provides physical security, law enforcement, crime prevention and investigation, traffic enforcement and control, apprehension of military deserters, and animal control. The Fort Meade Fire and Emergency Services Department provides fire suppression, rescue, fire prevention, emergency medical response, hazardous materials response, and aircraft crash response (U.S. Army Fort Meade 2011a).

On-post healthcare is provided at the Kimbrough Ambulatory Care Clinic. Kimbrough is the headquarters of the U.S. Army Medical Department Activity. Kimbrough provides primary care, selected specialty care, and same-day surgery for TRICARE Prime patients, but it is not a hospital and does not provide emergency services. Off-post health care facilities include the Anne Arundel Medical Center, Howard County General Hospital, Baltimore Washington Medical Center, and Johns Hopkins Hospital. Fort Meade has two dental clinics (AMEDD 2010; Fort Meade Alliance 2010; MHA 2011).

Shops, Services, Recreation. Fort Meade has a PX and a mini exchange, commissary, shoppette, bank, credit union, post office, and dining facilities. The PX has a food court, flower shop, nutrition shop, shoe shine, optical shop, cellular phone store, and garden/outdoor living center. The mini exchange has pet supplies, paint, outdoor living, patio furniture, mattresses, washers, dryers, refrigerators, freezers, dining furniture, lamps, sporting goods, toys, bicycles, lawn equipment, and such. Fort Meade also has a laundry/dry cleaner, auto repair shop, barber shop, beauty shop, and gas station (The Exchange 2011).

The Directorate of Morale, Welfare, and Recreation and its Army Community Service program offer a full complement of services to the Soldier, such as financial guidance, deployment preparation, stress management, and drug and alcohol abuse assistance.

Fort Meade has a variety of indoor and outdoor recreation facilities. The installation has a movie theater, library, youth center, fitness center and field house, indoor swimming pool, arts and crafts center, auto crafts center, and a bowling alley. Outdoor recreation activities available at Fort

Meade include swimming, tennis, golf, bowling, baseball/softball, volleyball, camping, and fishing (Fort Meade FMWR 2011).

Fort Meade is in the Baltimore-Washington, D.C., metropolitan area, which offers numerous shopping, recreational, and cultural opportunities. Fort Meade is about 15 miles from the Chesapeake Bay.

Environmental Justice. EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations*, was issued by President Clinton on February 11, 1994. The EO requires that federal agencies take into consideration disproportionately high and adverse environmental effects of governmental decisions, policies, projects, and programs on minority and low-income populations.

According to the 2010 Census, minority populations composed 45 percent of the ROI's total population (U.S. Census Bureau 2011d). That is the same as the Maryland minority population percentage but higher than the national minority population of 36 percent (U.S. Census Bureau 2011c). The ROI poverty level was 11 percent, higher compared to the Maryland poverty rate of 9 percent but lower than the national poverty rate of 14 percent (U.S. Census Bureau 2011e).

Protection of Children. EO 13045, *Protection of Children from Environmental Health and Safety Risks*, issued by President Clinton on April 21, 1997, requires federal agencies, to the extent permitted by law and mission, to identify and assess environmental health and safety risks that might disproportionately affect children. Children are present at Fort Meade as residents and visitors (e.g., residing in on-post family housing, using recreational facilities, attending events). The Army takes precautions for their safety through a number of means, including using fencing, limiting access to certain areas, and requiring adult supervision.

3.9.2 Environmental Consequences

3.9.2.1 Proposed Action

EIFS Model Methodology. The economic effects of implementing the proposed action are estimated using the Economic Impact Forecast System (EIFS) model, a computer-based economic tool that calculates multipliers to quantify the direct and indirect economic effects resulting from a given action. Changes in spending and employment represent the direct effects of the action. On the basis of the input data and calculated multipliers, the model estimates changes in ROI sales volume, income, employment, and population, accounting for the direct and indirect economic effects of the action.

For purposes of this analysis, a change is considered significant if it falls outside the historical range of ROI economic variation. To determine the historical range of economic variation, the EIFS model calculates a rational threshold value (RTV) profile for the ROI. That analytical process uses historical data for the ROI and calculates fluctuations in sales volume, income, employment, and population patterns. The historical extremes for the ROI become the thresholds of significance (i.e., the RTVs) for social and economic change. If the estimated effect of an action is above the positive RTV or below the negative RTV, the effect is considered significant. Appendix C discusses the EIFS methodology in more detail and presents the model input and output tables developed for the analysis.

EIFS Model Results. Short-term minor beneficial economic effects would be expected. In the short term, the expenditures and employment associated with the demolition and construction for the proposed unaccompanied personnel apartments complex would increase ROI sales volume, employment, and income. The economic benefits would be short term, lasting for the duration of the construction period. Those changes in sales volume, employment, and income would be

within historical fluctuations (i.e., within the RTV range) and would be considered minor (Appendix C).

Housing. Long-term minor beneficial effects would be expected. The availability of quality, affordable housing in close proximity to where Soldiers work and train and to Soldier support services is important to morale and performance, and to overall Army recruitment and retention. Under the proposed action, Picerne would construct an unaccompanied personnel apartments complex for 816 Soldiers. That would increase the number of UPH units to address Fort Meade's shortfall of housing units for unaccompanied Junior Enlisted Soldiers. The apartments complex would be composed of 3- or 4-story garden-style apartment buildings with features and amenities comparable to quality market housing. The apartments would be one- or two-bedroom units with modern features desired by today's Soldiers, such as separate living spaces with private, one-person bedrooms and bathrooms; more storage space; laundry space with a full-sized washer and dryer in each unit; cable and high-speed Internet connections in the living room and bedrooms; fitness center; and on-site property management and maintenance services. The rent for the apartments units would not exceed a Soldier's allowance for housing and would include all utilities, Internet service, trash removal, storage, renter's insurance, and access to a clubhouse.

Emergency Services. No effects would be expected. The proposed unaccompanied personnel apartments buildings would be on Fort Meade property within the jurisdiction of the Fort Meade Directorate of Emergency Services, who would respond to emergencies at the proposed facilities as they do with existing facilities on the installation, at a cost reimbursable basis to the developer. The proposed apartments would be built to meet the appropriate guidelines for height of structures and would have all the safety requirements required by law (such as smoke alarms, fire alarms, sprinkler systems, operable exterior windows).

Shops, Services, and Recreation. Long-term minor beneficial effects would be expected. The proposed unaccompanied personnel apartments complex would include a community clubhouse with a pool, fitness center, community kitchen, and game/sports lounge, and the complex would be across the street from the PX, commissary, and shoppette. Living on-post allows Soldiers easy access to their work and training locations and on-post shopping, healthcare, recreational facilities and other Soldier support services. The convenience of the on-post location of the proposed apartments and availability and accessibility of the on-post resources is beneficial to a Soldier's quality of life.

Environmental Justice and Protection of Children. No effects would be expected. The proposed action of demolition of existing buildings and construction of unaccompanied personnel apartments on Fort Meade would not result in disproportionate adverse environmental or health effects on low-income or minority populations or children. The proposed action is not an action with the potential to substantially affect human health and safety or the environment by excluding persons, denying persons benefits, or subjecting persons to discrimination.

3.9.2.2 No Action Alternative

Long-term minor adverse effects would be expected on quality of life. Continuation of the present UPH programs would perpetuate deficiencies in quality of life for Soldiers eligible to use Army UPH. The No Action Alternative would not address the housing need for displaced Fort Meade Soldiers living off-post. Off-post housing increases the Soldiers' commute time and lacks the camaraderie, Soldier support services, and security of living on-post. The Army would continue to do regular maintenance on existing UPH, but those activities would be conducted on a constrained budget. Without implementing the proposed action, the Army would forego opportunities to leverage private-sector financing for the program.

3.10 TRANSPORTATION

3.10.1 Affected Environment

Transportation in and around Fort Meade is achieved mainly via road and street networks, pedestrian walkways, trails, and bike paths. The transportation system serves installation traffic consisting of everyday work, living, and recreation trips.

***On-Post Roadways and Gate Traffic*.** Transportation on roadways in and around Fort Meade during the morning and evening peak periods typically operate smoothly at the gates for access into the installation. Local roadways include the Patuxent Freeway (MD 32), Fort Meade Road (MD 198), Reece Road (MD 174) and Annapolis Road (MD 175). Pedestrian traffic is accommodated by a system of sidewalks along many streets and walkways between buildings. Troop pathways are provided for foot traffic in high-volume areas.

Fort Meade (not including the National Security Agency) can be accessed by five access control points (ACPs). All ACPs are gated entry, and all inbound vehicles are inspected at those points. Gate 7 (Demps Control Center gate) is the only gate providing 24-hour access, and all visitors without a DoD decal and identification badge must use that gate. Table 3-11 provides information on hours of operation, accessible roadway, and restrictions for all Fort Meade ACPs.

Table 3-11.
ACPs and their accessible roadway, operations hours, and restrictions

ACP and access road	Hours	Restrictions
Gate 1, Mapes Road and Route 32	5 a.m. to 9 p.m. M-F	Military and DoD only
Gate 2, Mapes Road and MD 175	5 a.m. to 7 p.m. M-F	Military and DoD only
Gate 3, Rockenbach Road	5 a.m. to 9 p.m. daily	Military and DoD only
Gate 6, Llewellyn Avenue and MD 175	6 a.m. to 8 a.m. M-F 4 p.m. to 6 p.m. M-F	Military and DoD inbound traffic only Outbound traffic only
Gate 7, Reece road and MD 175	24 hours daily	Must have sponsor or preauthorization

Source: U.S. Army Fort Meade 2011b

Off-Post Roadways. Maryland 295 is adjacent to Fort Meade, extending southwest-northeast and is a freeway that links Fort Meade to Washington, D.C., to the southwest and Baltimore, Philadelphia, Pennsylvania, and Wilmington, Delaware, to the northeast. Interstate (I) 95 generally parallels MD-295 and is approximately 5 miles from the post. Average daily traffic counts for off-post roads are listed in Table 3-12.

Table 3-12.
Average daily traffic counts (AADT) for gate-accessible off-post roadways

Roadway	AADT
Annapolis Road (MD 175) at Baltimore Washington Parkway (MD 295)	24,670
Mapes Road at Patuxent Freeway (MD 32)	42,740
Reece Road at Annapolis Road (MD 175)	21,530
Rockenbach Road at Annapolis Road (MD 175)	9,971

Source: MDSHA 2010

Air, Rail, and Public Transportation. The closest airport is about 10 miles from Fort Meade, Baltimore Washington Thurgood International (BWI), which provides commercial and passenger air service. Amtrak passenger rail service has stations in Washington, D.C., Baltimore, and BWI where connections can be made throughout the country. Metro heavy rail system provides high-speed transit service in a 15.5-mile corridor from Owings Mills in western Baltimore County through downtown Baltimore to John's Hopkins Hospital, with the potential to transfer to the area's light rail service, the Maryland Area Regional Commuter (MARC) service (Camden line), covering additional service portions of Baltimore City and County. The MARC train Penn Line serves Odenton, with connections to Baltimore and points north and to Washington DC and points south. MTA Light Rail provides medium-speed transit service from Baltimore County to Anne Arundel County. That service connects with the MARC, Metro Washington (Washington Metropolitan Area Transportation Authority [WMATA]) (intercity and commuter rail) and many local bus routes provided by MTA, WMATA, and Connect-A-Ride (sponsored by Anne Arundel and Howard counties) (USASMDC 2011).

3.10.2 Environmental Consequences

3.10.2.1 Proposed Action

Short- and long-term minor adverse effects would be expected on-post, and long-term minor beneficial effects would be expected at the gates and off-post. Construction vehicles would be scheduled and routed to minimize conflicts with other traffic. It is likely that during construction phases, construction vehicles and day-labor traffic would have a minor adverse effect on gate and installation traffic. Currently, 1,200 enlisted personnel are living off-post and commuting to Fort Meade for training, work, and personal trips each day. This number of trips should decrease when approximately 816 of these personnel are living on the installation upon completion of the Proposed Action.

On Post Roadways, Gate Traffic, and Parking. The personnel living in the proposed apartments would generate vehicle trips both originating at or destined to the apartment complex, while eliminating vehicle trips at gates where enlisted personnel currently living off-Post enter. In general, this would correspond to a net increase in the miles traveled on post, and a small net benefit to gate traffic.

Direct effects associated with the additional localized traffic would include an increase in daily and peak period traffic volumes on roadways and at intersections adjacent to the proposed apartment complex site. Table 3-13 contains a detailed breakdown of the weekday and weekend increases in traffic expected at the site.

Table 3-13
Estimated trip generation from the proposed unaccompanied personnel apartments

Period of Interest	Trips Generation Rate		Trips Generated	
Average Daily	6.47	trips/unit/day	2,769	trips/day
Weekday AM Peak Hour	0.56	trips/unit/hour	240	trips/hour
Weekday PM Peak Hour	0.69	trips/unit/hour	295	trips/hour
Saturday Daily	6.2	trips/unit/day	2,654	trips/day
Saturday Peak Hour	0.52	trips/unit/hour	223	trips/hour
Sunday Daily	5.49	trips/unit/day	2,350	trips/day
Sunday Peak Hour	0.52	trips/unit/hour	223	trips/hour

Source: ITE 2003

There would be an additional 295 trips generated during the PM peak hour from the entire proposed site, whereas all other periods would have fewer additional trips. These additional trips would be split between the three access points to the proposed apartments, and would account for less than 100 trips per hour at any access point, subsequently less than 100 trips at any intersection, and a fraction thereof for any turning movement at any intersection. Notably, vehicle trips for UPH were included in the traffic analysis for the BRAC EIS at the previously proposed UPH site, which is approximately one-tenth of a mile west of the currently proposed apartment complex site on Mapes Road. The most recent analysis of traffic in the area was conducted during the Final EIS for Campus Development (NSA, 2010). The Level of Service (LOS) for the intersections adjacent to the proposed site under future conditions is outlined in Table 3-14. The level of service included all trips generated by the proposed realignment and other associated activities under the BRAC (including UPH) and those for the campus development for NSA.

Table 3-14
Level of service in 2015 at intersections adjacent to proposed apartments

Intersection	Level of Service	
	AM Peak Hour	PM Peak Hour
Cooper Avenue and Mapes Road	C	E
MacArthur Road and Mapes Road	C	B
Reece Road and MacArthur Road	C	C

Source: NSA 2010

Under the proposed location in this EA, the unaccompanied personnel apartments traffic would be shifted approximately one half mile east on Mapes Road to the newly proposed site with westbound traffic on Mapes Road now passing through the signalized intersection of Mapes Road and Taylor Avenue, the primary entrance to the new Defense Media Activity facility. This may have small but mixed effects on the intersections outlined in Table 3-14, as well as the intersections of Ruffner and Cooper Roads, Ruffner and MacArthur Roads, and Reece Road and Cooper Avenue. However, because UPH trips were already included in the analysis for previous NEPA documentation and the increase in the number of trips at any given intersection would be small in and of itself, it is not anticipated that it would change the estimated Level of Service (LOS) at any intersection previously analyzed. However, the impact of the shift in traffic resulting from the relocation of Army Lodging was not considered in this analysis.

Individuals accessing the proposed apartment complex would use installation gates in a pattern similar to people currently using gates to access existing housing facilities. There would likely be a small decrease in traffic at Mapes Road Gate because many single and unaccompanied individuals with the proper decals and IDs who previously resided off-Post would no longer commute; however, it is not expected that traffic at any gate would change substantially from implementation of the proposed action.

The project is currently in the preliminary design stage, and the current site plan indicates a provision for 816 parking spaces (one parking space for each Service Member) at the proposed apartment complex site. Traffic effects attributable to the proposed action would be minor.

Infrastructure upgrades associated with the unaccompanied personnel apartments would include a roadway extending from the intersection of Wigle Road and Cooper Avenue to the intersection of Mapes Road and English Avenue (Figure 2-2). Ruffner Road would be shortened and would no longer extend to Cooper Avenue. Access to the site would be from the west and south from both ends of the new roadway, and from the east from Ruffner Road. Roadway improvements to

reduce the level of effect from the BRAC action and associated activities (including UPH) to less than significant levels were addressed in the BRAC EIS (USACE, 2007) and the *Environmental Assessment for Fort George G. Meade Roadway Improvements, Fort George G. Meade Fort George G. Meade Anne Arundel County, Maryland* (Fort George G. Meade 2010).

Infrastructure upgrades to the Rockenbach/Cooper and Mapes/Cooper intersections are anticipated to be completed prior to full occupancy of the unaccompanied personnel apartments and will further reduce local intersection impacts during morning and evening peak travel times.

Off-Post Roadways. The small net increase in housing units would constitute a corresponding decrease of approximately 2,485 vehicle trips per day either originating at or destined to the installation. Many of these trips would occur at peak periods, and would account for some small beneficial decrease in the amount of off-post traffic. This would constitute a minute change in off-post traffic, and not appreciably affect any nearby roadways or intersections. These effects would be negligible.

Air, Rail, and Public Transportation. The proposed action would have no appreciable effect to air, rail, or public transportation.

3.10.2.2 No Action Alternative

No effects on transportation resources would result from implementing the No Action Alternative. No construction would be undertaken, and no new housing operations would take place. Traffic and transportation conditions would remain as described in Sections 3.10.1.

3.11 UTILITIES

3.11.1 Affected Environment

All utility services, including water, wastewater, gas, electricity, and communications, are available near the proposed site. The utility components discussed in this section include water supply, sanitary sewer and wastewater system, stormwater drainage, electricity, natural gas, solid waste management, and communications.

Potable Water. American Water owns and operates the potable water system on Fort Meade. Fort Meade receives most of its potable water from six groundwater wells, the source for which is the Patuxent Aquifer. The Little Patuxent River is used as a secondary source by the installation's WTP, which was last upgraded in 1986. Water is stored in three aboveground, clearwell, storage tanks with a combined capacity of 2.3 million gallons and seven active water storage tanks with capacities that range from 200,000 to 600,000 gallons (USASMDC 2011).

Wastewater System. American Water owns and operates the wastewater treatment system on Fort Meade. The wastewater treatment plant (WWTP) has the capacity to process and treat 12.3 million gallons per day (mgd) of wastewater, but the current average flow is 4.6 mgd. The 10-year average flow to the plant is 2.3 mgd, with a maximum instantaneous flow of 12 mgd. The maximum flow to the plant typically occurs during wet weather. Once treatment of the wastewater is complete, the majority of the treated water is discharged into the Little Patuxent River.

Stormwater System. Fort Meade's storm drainage system consists of two major defined watersheds and one minor undefined watershed. The three natural drainage areas are supplemented with an extensive network of storm drainpipes and attendant drainage structures supplemented by swales, ditches, other drains, and retention ponds. Those drainage areas are generally north south oriented, emanate in the northern portion of the installation, and ultimately discharge into the Little Patuxent River (USASMDC 2011).

Provisions of COMAR 26.09.01-26.09.02 require that all jurisdictions in Maryland implement a stormwater management program to control the quality and quantity of stormwater runoff resulting from new development. The regulations require that the release rate from newly developed areas not exceed the rate generated by the site under undeveloped conditions. Furthermore, Fort Meade maintains a Stormwater Pollution Prevention Plan that establishes BMPs for controlling and preventing siltation and other contaminants associated with construction and industrial activity sites from reaching area surface waters (USASMDC 2011).

Solid Waste. Solid waste, including household refuse, is collected on Fort Meade by a private contractor. Construction and demolition (C&D) debris is collected at a construction site and disposed of at a permitted facility off-post. The debris is also collected and processed through a contracted transporter. Solid wastes are collected and disposed of in accordance with Fort Meade recycling policies under a contract with Melwood.

Electricity. Baltimore Gas and Electric (BG&E) supplies the majority of the electricity used at Fort Meade, whereas some additional electricity is provided by Constellation Energy. A 115-kilovolt (kV) transmission line brings electricity to government-owned master substations on the installation. The existing primary source for approximately 79 percent of on-post power is a 110-kV feeder line from the BG&E Waugh Chapel Power Station. In 2004 Fort Meade followed a government initiative to privatize utilities on the installation and partnered with BG&E. Since then, BG&E has upgraded 75 percent of the installation's gas and electrical systems (Fort Meade 2011).

Natural Gas. BG&E supplies Fort Meade with natural gas. The natural gas distribution system at Fort Meade is extensive and runs throughout the installation. New gas-fired boilers installed throughout the installation have replaced old centralized oil-fired boilers (USASMDC 2011).

3.11.2 Environmental Consequences

3.11.2.1 Proposed Action

Long-term minor adverse effects on utilities would be expected. The existing infrastructure for all utilities would be adequate for projected demands from the proposed apartments, but the project would increase demand on all utilities.

The proposed action would generate approximately 10,769 tons of C&D debris (Table 3-15). Approximately half of the debris would be recycled, which would result in 5,385 tons of nonhazardous C&D debris for disposal. Detailed calculations of the estimated amount of non-hazardous solid waste that would be generated by the proposed action are provided in Appendix D. All solid waste generated by the proposed action would be disposed of in accordance with Fort Meade recycling policies.

A slight increase in utility systems usage would be expected from implementing the proposed action. Because the residents of the apartments are personnel who already use installation utilities during the day, the proposed action would primarily increase utility usage attributable to the evening. All the utility systems on the installation, however, are adequate to handle any increase attributable to the proposed action. The new construction would meet the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Silver standards.

3.11.2.2 No Action Alternative

No effects on utility systems would be expected from implementing the No Action Alternative. No new housing would be constructed, and no changes in utility usage would result. Utility conditions would remain as described in Sections 3.11.1.

Table 3-15.
Summary of construction and demolition debris

	Type	Debris generation rate (lbs/sq ft)	Debris generated (tons)	Quantity recycled (50%) (tons)	Total quantity landfill disposed of (tons)
Construction					
796,560 sq ft	Residential	4.4	1,752	876	876
Demolition					
156,818 sq ft	Residential	115	9,017	4,509	4,509
Total			10,769	5,385	5,385

Source: USEPA 1998

3.12 HAZARDOUS AND TOXIC SUBSTANCES

3.12.1 Affected Environment

DoD policy requires that the environmental condition of property be determined before any real property may be sold, leased, transferred, or acquired. In accordance with that policy, an Environmental Condition of Property (ECP) report was prepared by Environmental Consultants and Contractors, Inc., (ECC) for the parcel and structures included in the Preferred Alternative ("Subject Property"). The ECP report documents the physical and environmental condition of the Subject Property resulting from the past storage, use, release, and disposal of hazardous substances and petroleum products within or directly adjacent to the subject properties. Tetra Tech, Inc. was tasked with drafting the environmental assessment for the Subject Property. The findings from the ECP report drafted by ECC, and independent research and data collection conducted Tetra Tech personnel were used to present the following conclusions and recommendations for the Subject Property.

3.12.1.1 Polychlorinated biphenyls (PCBs)

Three pad-mounted transformers are on the Subject Property. According to a Fort Meade DPW representative, the transformers had been recently installed to replace older transformers. The transformers were described as being relatively new and in good condition. No historical records exist of PCB releases occurring on the Subject Property (DPW 2011).

On the basis of the age of the structures, the fluorescent light ballasts throughout the existing structures might contain PCBs. DPW representatives were unable to verify that the light components did or did not contain PCBs (ECC 2011).

3.12.1.2 Installation Restoration Program (IRP) and Solid Waste Management Units (SWMUs)

No IRP sites or SWMUs are within the boundaries of the Subject Property; however, three former IRP sites are within 500 feet the Subject Property. The sites are described below.

IRP Site *Former Incinerator Site* is 75 feet directly northeast of the Subject Property, across Reece Road. The site is within the military residential housing development known as Potomac Place Housing. The incinerator site was documented as far back as 1922 from an old military war games map (Fort Meade USACE Baltimore District 2011). The startup date is unknown. In 1996 EPA conducted an *Aerial Photographic Analysis of Fort Meade Cantonment Area* to identify and delineate environmentally significant sites across the installation from aerial imagery data collected between 1938 and 1995. The study does not identify any environmentally significant

indicators such as stressed vegetation or stained soils at the incinerator site or surrounding area (ECC 2011).

According to the 2011 Site Management Plan for Fort Meade, an environmental investigation was conducted in 2006 at the former incinerator site that collected 3 surface and 12 subsurface soil samples. The detected concentrations reported in the analytical laboratory results from the soil samples were below EPA cancer risk and non-cancer risk thresholds; however, the soil samples were not analyzed for dioxins. A site investigation is planned for the next year, which will collect six surface soil samples to be analyzed for dioxins, furans, and metals. Groundwater is not thought to be affected by previous activities conducted at the site and, therefore, not a media of concern according to the 2011 Site Management Plan. Because of the limited potential for the groundwater to be affected and proximity to the Subject Property, it is believed that the former incinerator has not affected the Subject Property (USACE Baltimore District 2011). However, on the basis of the analytical results from the next environmental investigation to be conducted sometime this year at the former incinerator site, environmental investigations might be warranted on the northeastern corner of the Subject Property.

The second IRP site identified near the Subject Property is Manor View Dump (Area of Interest [AOI] 36) that is located approximately 0.25 miles north of the Subject Property, just north of the Incinerator site. The site is described as a 6.5 acre former dump that is bounded by a group of residential housing units to the north on Chatillion Street, 2nd Corps Boulevard to the south, Jones Drive to the west, and MacArthur Road to the east. The former landfill currently lies beneath a portion of the Potomac Place neighborhood and Manor View Elementary School. The site was discovered in 2003 while moving earth for the housing privatization initiative at Fort Meade. Municipal waste from the 1940s was uncovered on the property adjacent to the Manor View Elementary School. Residents in houses in Potomac Place neighbor near the site were relocated in December 2005 and the house remain vacant. The Manor View Elementary School remained open during the remedial investigation, but outdoor activities were temporarily suspended. Today the school is operating normally. A site investigation as conducted in 2003 that included soil, groundwater, sediment, surfacewater, and outdoor/indoor air and soil gas sample collection. A landfill gas migration control system was installed in August 2005. Additionally, a passive soil gas venting trench was installed and later upgraded to a soil vapor extraction system with a blower to enhance vapor capture. A non-time critical removal action is currently being performed to remove the methane generating wastes at the site. A feasibility study will be developed after this action is completed (USACE Baltimore District 2011).

The third IRP site identified near the Subject Property is Site M Parcel 9, which is approximately 500 feet west of the parcel and directly north of Parcel 6. Site M Parcel 9 is a 4.9-acre area on the east-central portion of the golf course. The site was described in the October 2010 Site Management Plan as being composed of two areas of interest, AOI-13A and AOI-14 after ground scarring at the sites was identified in historic aerial photographs from 1938 and 1943 (ECC 2011).

As part of the EBS performed in 2004 for all of Site M, a geophysical investigation was performed at Parcel 9. During the investigation, strong anomalies were encountered on the northern and central portions of AOI-13A. One anomaly was attributed to an underground utility line. There was no visible evidence of utility lines (i.e., manhole covers) or debris in the vicinity of a second anomaly. However, a weak signal was encountered in the vicinity during the utility clearance of the area, and it was believed to be indicative of a line constructed of nonconductive material or an abandoned utility line. A geophysical investigation of AOI-14 discovered several large, strong anomalies on the western portion of the area. Because the identity of the anomalies could not be confidently established, sampling points were placed in the vicinity to determine if the AOI was environmentally affected.

Over the course of investigations at the site, four soil and two groundwater samples were collected inside the Site M Parcel 9 area. Because no surface spills/releases were identified at the site, no surface soil samples were collected, and no surface soil data are available for it. Cumulative screening assessment results for subsurface soil are below the site-specific cancer risk threshold. Laboratory analysis of the groundwater samples detected one compound (bis(2-thylhexyl)phthalate, a common laboratory contaminant) slightly above its federal Maximum Contaminant Level (MCL) but the cumulative cancer risk estimate and highest target organ cumulative non-cancer hazard estimate (excluding compounds detected below their federal MCLs) are both below EPA guidelines (ECC 2011). A report for Site M Parcel 9 was submitted to EPA recommending no further action for soil and groundwater investigations at site, and EPA concurred (USACE Baltimore District 2011). The site has recently been redeveloped with office buildings and parking lots for DISA. Because of the downgradient location of this site relative to the Subject Property, the potential for effect on the Subject Property appears to be minimal.

3.12.1.3 Munitions and Explosives of Concern (MEC)

According to the 2010 Army Defense Environmental Restoration Program Action Plan, a Phase III Army Range Inventory was completed at Fort Meade in 2003 that identified six sites as eligible for the Military Munitions Response Program (MMRP). However, none of the six sites are on the Subject Property or on adjacent lands (Fort Meade Action Plan 2010). Existing records and available information provided by Fort Meade during the drafting of the ECP provided evidence that MECs are not present on the Subject Property. None of the parcels are within the boundaries of any training or munitions ranges (ECC 2011).

Because the project is on a military installation; there is a potential for encountering MEC. If the lessee or any person associated with the project encounter or suspect they have encountered MEC on the project, they must not attempt to disturb, remove or destroy it. Instead, they must cease any intrusive or ground-disturbing activities being conducted at the project and immediately notify the installation police and Fort Meade Provost Marshall's Office.

3.12.1.4 Storage tanks

According to the 2011 Draft ECP for the Picerne Parcel G-2 historical records search and information provided by Fort Meade DPW personnel, it was determined that no aboveground storage tanks (ASTs) or underground storage tanks (USTs) are within the boundaries of the Subject Property.

During the Visual Site Inspection (VSI) conducted by ECC as part of the drafting of the 2011 ECP for the Picerne Parcel, ECC personnel did not observe any evidence of existing or former ASTs/USTs on the Subject Property. Additionally, slanted floors in the basements of each of the accessed buildings (4703, 4705, and 4707) were observed. The slanted floors appeared to be *coal chutes*, which suggests that the buildings might have been heated by coal-fired furnaces.

Although Fort Meade DPW personnel indicated that most buildings at Fort Meade were at one time heated by heating oil, which was stored in ASTs and USTs, the installation could not provide any information to verify that ASTs or USTs had ever been on the Subject Property. The ASTM-E1527-05-compliant records search performed on the Subject Property and adjacent lands for the preparation of this EA did not provide any records of spills or leaks occurring on the parcel associated with ASTs or USTs.

Three active 12,000-gallon gasoline and diesel USTs are directly northeast of the Subject Property at the installation's shoppette and gas station at 4706 MacArthur Road. The USTs are, at their closet point, approximately 130 feet from the Subject Property. A leaking UST (LUST) case was opened during the installation of the USTs in 1998; however, it is believed that the case was

opened to document the electronic leak detection system connected to the USTs. No actual petroleum releases have been documented at the facility.

3.12.1.5 Pesticides

Pesticides have been applied at Fort Meade as needed for pretreatment and maintenance control. Fort Meade has an Integrated Pesticide Management Plan (IPMP) that covers the storage and application of pesticides. The IPMP is performed in accordance with the U.S. Army's Integrated Pest Management techniques. The IPMP is intended to reduce the use of pesticides. According to the installation's 2005 IPMP, pesticides classified as moderately or highly toxic are stored in Building 294, in the southeastern corner of the installation. That facility meets the standard set forth in *Military Handbook 1028/8A* and the criteria described in 40 CFR 165 (U.S. Army Fort Meade 2005).

Although an active installation-wide IPMP is in effect for Fort Meade, pesticides might have been used around the existing structures across the Subject Property. Because the buildings were constructed between 1952 and 1970 and have been occupied through present day, the historical use of pesticides might have resulted in residual pesticides on the Subject Property.

3.12.1.6 Lead-Based Paint (LBP)

LBP surveys were not conducted for all buildings at Fort Meade. A limited survey was performed in 1997 for Buildings 4704, 4705 and 4709. Those surveys were performed in July 1997 using an X-ray fluorescent (XRF) device and appear to have only included exterior surfaces of the site structures. According to the summary tables, LBP was identified on metal exterior door casings on Buildings 4704 and 4707. ECC was also provided a summary table for a LBP survey (also performed using an XRF) performed inside Building 4705 in February 1998. The LBP survey identified door screens, door casings, stair handrails, and baseboards as building components coated with LBP. No other LBP surveys or abatement reports were prepared or are on record.

Before initiating any demolition or renovation activities, the potential of environmental effects from LBP would be evaluated and addressed as specified in the appropriate regulatory requirements. Demolition that involves LBP would be evaluated for compliance with the OSHA standard at 29 CFR 1926.62; EPA and U.S. Department of Housing and Urban Development standards; and state, federal, and Army regulations. Measures to control airborne lead dust would be implemented.

3.12.1.7 Asbestos Containing Material (ACM)

An asbestos survey of Buildings 4703, 4704, 4705, 4707, 4717, 4720, and 4721 was conducted by BCM Engineers in 1996 and 1997 to determine the presence of ACM in the facilities on Fort Meade. Only accessible areas of the buildings were inspected for ACM. Inaccessible areas, such as behind walls or ceilings were not inspected. The asbestos surveys identified various types of vinyl floor tile, floor tile mastic, and baseboard mastic as non-friable ACMs. Damaged and undamaged thermal system insulation (pipe insulation, pipe fittings, and such) identified as friable ACMs were found in boiler rooms and crawl spaces of Building 4704. A trace amount of asbestos was also detected in a bulk sample of drywall system in Building 4705 (BCM 1996a, 1996b, 1996c, 1996d).

An asbestos survey/inspection for Building 4709 was not available; therefore, the presence/absence of ACM in those structures is not known. The building materials for the structures are similar to the four structures that were surveyed for ACM; therefore, it is likely that the structures also contain similar ACM building materials.

There are no asbestos abatement reports on record for any of the structures on the Subject Property. It is not known if any asbestos abatement has been performed at the buildings within the Subject Property. During the VSI conducted by ECC for the ECP Report of the Subject Property, no visual evidence was observed of asbestos-containing pipe insulation in the basement boiler rooms in the accessed structures. ECC personnel observed suspect ACMs in the two accessed units in Building 4720, including vinyl floor tile, vinyl floor mastic, drywall systems, 9x9 acoustic ceiling tiles, and cement board siding on the exterior stairway of the structure. The door boiler room off the west side of Building 4720 had a sign that stated asbestos hazards were within, which suggests damaged friable ACMs were in the boiler room. ECC personnel did not have access to the boiler room during the VSI (ECC 2011).

Asbestos regulations require comprehensive asbestos surveys be performed on all structures before demolition or renovation to determine if special handling or abatement is required before construction or demolition. Before initiating any demolition or renovation activities, the potential of environmental impacts from ACM building materials would be evaluated and addressed as specified in the appropriate regulatory requirements.

3.12.1.8 Radon

Fort Meade is in Anne Arundel County, which is classified by EPA as being within a Zone 2 moderate potential area for radon. That means existing subject properties could have an average indoor radon screening level between 2 and 4 picocuries per liter (USEPA 2011). According to Fort Meade DPW personnel, an installation-wide radon survey of the structures on Fort Meade was completed 1990. Reportedly, none of the representative buildings tested for radon had results in excess of applicable standards. Therefore, radon is not considered significant (Fort Meade DPW 2011).

3.12.2 Environmental Consequences

3.12.2.1 Preferred Alternative

No adverse effects related to radon, IRP sites, and MEC would be expected from implementing the proposed action. Several environmental concerns that could have minor adverse short- and long-term effects have been identified on the subject parcel. These concerns are discussed below.

No residual contamination is known to exist on the parcel, but a complete survey of the parcel has not been conducted and information about past uses is incomplete. If residual contamination was encountered during site clearing or excavation, the contractor would immediately stop work and notify appropriate installation personnel. No effects to site workers would be expected because they would be required to work under the requirements of a project-specific health and safety plan. Historical records searches and information provided by Fort Meade DPW indicate that no ASTs or USTs are within the boundaries of the parcel. The installation could not provide any information, however, to verify that ASTs or USTs had never been located on the parcel.

ACM and LBP materials encountered during demolition would be characterized and disposed of in accordance with applicable federal, state, and local solid waste management regulations. LBP would be encapsulated and removed in accordance with applicable federal guidelines, which cover contractor training, notification requirements, use of personal protective equipment, and approved disposal methods.

If petroleum-impacted soils or ACM and LBP building materials were encountered during construction activities, they would either be mitigated or removed completely, resulting in an improved condition of the subject parcel.

Construction would involve the use of heavy equipment, which could result in minor spills from engines and equipment operation. Appropriate BMPs would be implemented during construction to ensure that any leaks or spills would have negligible environmental effect. Any spills occurring during construction would be reported to the Fort Meade Environmental Division in accordance with the installation *Spill Prevention, Control and Countermeasure Plan*. Hazardous and toxic substances would be managed in accordance with established installation and regulatory requirements.

3.12.2.2 No Action Alternative

No adverse environmental or health effects related to the use, disposal, or storage of hazardous or toxic materials would be expected from implementing the No Action Alternative.

3.13 CUMULATIVE EFFECTS

Recent changes have occurred at Fort Meade recently as a result of the 2005 BRAC Commission recommendations and associated actions. The BRAC Commission recommended that three major activities relocate to Fort Meade: DISA, the Defense Media Activity, and the Adjudication Activities co-location offices. Additionally, a National Security Agency campus development project will begin late in 2012 west of the DISA development site and along Rockenbach Road. Smaller projects are also planned on Fort Meade, including construction of a new AAFES Exchange in 2011 and construction of a new hotel along Mapes Avenue in 2012–2013. These projects, combined with the proposed action, would create cumulative effects. The cumulative effects are described below by resource area. Although these cumulative effects are adverse, none are considered significant.

- Forested land: An overall loss of open space and forested areas both on- and off-post resulted from implementation of the BRAC and other recent past actions at Fort Meade. The proposed action of this EA would also result in a loss of forested land on Fort Meade. Combined, these activities could result in the loss of approximately 240 acres of regional forested land.
- Air quality: BRAC and other recent past actions at Fort Meade as well as regional projects have increased operational emissions of air pollutants and affected regional air quality. These effects were mainly related to commuter emissions and vehicle traffic within the Baltimore airshed. The proposed action would create a short-term increase in pollutant emissions associated with construction, but could help offset some of the BRAC and regional increase in commuter emissions because single and unaccompanied personnel at Fort Meade would decrease their commutes as a result of implementing the proposed action.
- Water quality: Development projects increase stormwater runoff to surrounding surface waters and to ground water, both during construction when sedimentation is increased and after construction is complete when the increase in impervious area creates a local permanent increase in stormwater runoff. The proposed action would also have these effects. A stormwater management plan is developed for each project to manage runoff, and generally development projects are required to maintain post-construction runoff from the project site at pre-development levels through onsite stormwater management.
- Transportation: The proposed action could occur concurrently with other proposed development projects, including the East Campus Development at NSA, Privatization of Army Lodging, construction of an AAFES Exchange, roadway improvements, and other potential Military Construction Army projects. Potential traffic issues could arise at Fort Meade along major roadways from the additional construction and operational traffic. Existing traffic problems identified on-post include traffic delays during the morning

and evening peak hours at installation entrance gates and several on-post intersections. The most recent analysis of traffic in the area was conducted during the Final EIS for Campus Development at NSA, which concluded that, the BRAC, Enhanced Use Lease projects (which were analyzed in the BRAC EIS but never implemented), and additional NSA traffic would result in substantial reductions in LOS at both on- and off-post intersections (NSA, 2010). The analysis included all cumulative activities known at the time (including a UPH project, although at a different location), as well as naturally occurring background growth. The proposed apartments would be a small component of the overall growth associated with these activities, incrementally contributing to traffic increases, particularly on post. Therefore, the proposed action would have minor adverse cumulative effects on traffic.

- Utilities: The development of new facilities and the influx of population because of BRAC actions have resulted in an increased demand on utility systems at Fort Meade. Future development of the NSA campus and new hotels at Fort Meade will further increase utility system demands. The proposed action would increase the overall demand on installation utility systems, but not on regional systems. No regional population increase would result from the proposed action.

3.14 MITIGATION

No significant adverse effects resulting from implementation of the proposed action have been identified. Mitigation measures that would be implemented in association with the proposed action include using appropriate BMPs during and after construction to avoid and minimize adverse environmental effects, including those mentioned below.

- Compliance with an MDE-approved stormwater management plan and erosion and sediment control plan, using stormwater management and erosion control BMPs required by MDE.
- Compliance with Maryland's Forest Conservation Act and the Fort Meade Tree Management Policy through coordination with MDNR and the Fort Meade DPW-ED. A forest mitigation plan will be prepared and submitted to DPW-ED and MDNR for approval for the clearing of the 21.6 acres of wooded area. Tree preservation measures will be incorporated in construction plans. The fair market value of the forest products removed because of the proposed action will be deposited in the Army Forestry Account to support Army forestry programs.
- Compliance with a Clean Water Act Section 404 permit. If the USACE determines that wetlands are on the parcel, then a Section 404 permit will be obtained and any required mitigation measures in the permit will be complied with.
- Compliance with the terms of a Jurisdictional Application Permit/wetlands permit, if required, submitted to MDE and the U.S. Army Corps of Engineers for review and approval for impacts on the intermittent stream on the parcel. The Federal Consistency Determination statement for coastal zone impacts would be covered and included in the permit language and approval from MDE.
- Compliance with a permit issued under MDE's Nontidal Wetlands regulations, if required because of disturbance of the stream on the northern part of the parcel.
- Compliance with all applicable federal, state, and local air regulations, such as those for the control of fugitive dust.

- Conducting construction activities during normal weekday work hours (generally 7 a.m. to 5 p.m.) and avoiding conducting construction activities on evenings and weekends to the extent practical.
- Meeting the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Silver standards.
- Mitigating or removing completely any petroleum-impacted soils or ACM and LBP building materials, if they are encountered during construction activities. ACM and LBP materials encountered during demolition would be characterized and disposed of in accordance with applicable federal, state, and local solid waste management regulations. LBP would be encapsulated and removed in accordance with applicable federal guidelines.

SECTION 4.0
CONCLUSIONS

This EA has been prepared to evaluate the potential effects on the natural and human environment from the proposed action for Fort Meade to lease approximately 45 acres of land on the installation to Picerne for 50 years and for Picerne to construct and operate unaccompanied personnel apartments on the leased land during the lease period. The EA examines the Preferred Alternative and a No Action Alternative. The No Action Alternative is prescribed by CEQ regulations to serve as the baseline against which the Preferred Alternative and other alternatives are analyzed.

This EA evaluates potential long- and short-term effects on land use, aesthetic and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics (including environmental justice and protection of children), transportation, utilities, and hazardous and toxic substances.

Implementing the Preferred Alternative would be expected to result in a combination of short- and long-term minor adverse and beneficial effects. Short-term minor adverse effects on air quality, noise, soils, water resources, and transportation would be expected, primarily associated with construction activities. Long-term minor adverse effects would be expected on air quality, biological resources, and utilities. The air quality effects would arise from emissions from heating and cooling systems operating at the new facilities; biological effects would arise from the loss of forest habitat; and the utilities effects would arise from the increase in solid waste (construction and demolition debris) and additional demand on installation utilities. Short-term minor beneficial effects on the local economy would be expected from expenditures and employment associated with construction. Long-term minor beneficial effects on aesthetic and visual resources and socioeconomics (quality of life) would be expected from the overall improved quality of the residential facilities.

No significant adverse effects resulting from implementation of the proposed action have been identified. Mitigation measures that would be implemented in association with the proposed action include using appropriate BMPs during and after construction to avoid and minimize adverse environmental effects, including those mentioned below.

- Compliance with an MDE-approved stormwater management plan and erosion and sediment control plan, using stormwater management and erosion control BMPs required by MDE.
- Compliance with Maryland's Forest Conservation Act and the Fort Meade Tree Management Policy through coordination with MDNR and the Fort Meade DPW-ED. A forest mitigation plan will be prepared and submitted to DPW-ED and MDNR for approval for the clearing of the 21.6 acres of wooded area. Tree preservation measures will be incorporated in construction plans. The fair market value of the forest products removed because of the proposed action will be deposited in the Army Forestry Account to support Army forestry programs.
- Compliance with a Clean Water Act Section 404 permit. If the USACE determines that wetlands are on the parcel, then a Section 404 permit will be obtained and any required mitigation measures in the permit will be complied with.
- Compliance with the terms of a Jurisdictional Application Permit/wetlands permit, if required, submitted to MDE and the U.S. Army Corps of Engineers for review and approval for impacts on the intermittent stream on the parcel. The Federal Consistency

Determination statement for coastal zone impacts would be covered and included in the permit language and approval from MDE.

- Compliance with a permit issued under MDE's Nontidal Wetlands regulations, if required because of disturbance of the stream on the northern part of the parcel.
- Compliance with all applicable federal, state, and local air regulations, such as those for the control of fugitive dust.
- Conducting construction activities during normal weekday work hours (generally 7 a.m. to 5 p.m.) and avoiding conducting construction activities on evenings and weekends to the extent practical.
- Meeting the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Silver standards.
- Mitigating or removing completely any petroleum-impacted soils or ACM and LBP building materials, if they are encountered during construction activities. ACM and LBP materials encountered during demolition would be characterized and disposed of in accordance with applicable federal, state, and local solid waste management regulations. LBP would be encapsulated and removed in accordance with applicable federal guidelines.

For each resource, the predicted effects from both the Preferred Alternative and the No Action Alternative are summarized in Table 4-1.

Table 4-1.
Summary of potential environmental and socioeconomic consequences

	Environmental and socioeconomic effects	
Resource	**Preferred Alternative**	**No Action Alternative**
Land use	No effect	No effect
Aesthetic and visual resources	Long-term minor beneficial	No effect
Air quality	Short- and long-term minor adverse	No effect
Noise	Short-term minor adverse	No effect
Geology and Soils	Short-term minor adverse	No effect
Water resources	Long-term minor adverse	No effect
Biological resources	Long-term minor adverse	No effect
Cultural resources	No effect	No effect
Socioeconomics	Short- and long-term minor beneficial	Long-term minor adverse
Transportation	Short-term minor adverse Long-term minor beneficial	No effect
Utilities	Long-term minor adverse	No effect
Hazardous and toxic substances	No effect	No effect

Implementing the Preferred Alternative would not be expected to result in significant environmental or socioeconomic effects. No significant adverse cumulative effects associated with implementing the proposed action were identified. Issuance of a FNSI would be appropriate, and an EIS need not be prepared before implementing the Preferred Alternative.

SECTION 5.0
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SECTION 6.0
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M.S., Technical and Scientific Communication, James Madison University
B.A., Computer Information Systems, Eastern Mennonite University
Years of Experience: 23

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SECTION 7.0
DISTRIBUTION LIST

State and Federal Agencies

Ms. Linda C. Janey
Maryland State Clearinghouse
Maryland Office of Planning, Room 1104
301 West Preston Street
Baltimore, MD 21201-2365

Ms. Brigid E. Kenney
Office of the Secretary
Maryland Department of Environment
1800 Washington Boulevard
Baltimore, MD 21230

Ms. Lori Byrne
Maryland Department of Natural Resources
Tawes State Office Building
580 Taylor Avenue
Annapolis, MD 21401

Mr. Leopoldo Miranda
Chesapeake Bay Field Office
U.S. Department of the Interior Fish and Wildlife Service
177 Admiral Cochrane Drive
Annapolis, MD 21401

Mr. Bill Arguto
US Environmental Protection Agency
Region 3
1650 Arch Street
Philadelphia, PA 19106

Libraries

Anne Arundel County Public Library
West County Area Library
1325 Annapolis Rd
Odenton, MD 21113

Medal of Honor Memorial Library
Fort Meade
4418 Llewellyn Avenue
Fort Meade, MD 20755

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APPENDIX A

Agency Coordination

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DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
US ARMY GARRISON, FORT GEORGE G MEADE
4551 LLEWELLYN AVENUE, SUITE 5000
FORT GEORGE G. MEADE, MARYLAND 20755-5000

REPLY TO
ATTENTION OF:

FEB 10 2012

Directorate of Public Works

Ms. Linda C. Janey
Maryland State Clearinghouse
Maryland Office of Planning, Room 1104
301 Preston Street
Baltimore, Maryland 21201-2365

Dear Ms. Janey:

On behalf of Fort George G. Meade, Picerne Military Housing, LLC (Picerne) is preparing an Environmental Assessment (EA) for the proposed construction of single and unaccompanied personnel garden-style apartments on Fort Meade. The EA is being prepared in accordance with the National Environmental Policy Act of 1969, as amended.

Under the proposed action, Picerne would construct 17 apartment buildings that would include approximately 40 one-bedroom and 388 two-bedroom apartments, providing a total of 816 bedrooms. The apartment complex would provide housing for Junior Enlisted Service Members. Amenities would include a 6,000-square-foot community clubhouse with a swimming pool, fitness center, media center, club room, landscaped barbeque areas, and gathering spaces. Development density would be 10 living units per acre.

The parcel of land on which the apartment buildings are to be constructed is a 45-acre tract at the northeast corner of the intersection of Cooper Avenue and Mapes Road, bounded on the north by Reece Road. Existing trees and vegetation would be retained to the extent allowed by development constraints, but the proposed action would result in the removal of approximately 21.6 acres of wooded areas on Fort Meade. Enclosed is a copy of the proposed project area.

The initial project development period would last from June 2012 through August 2015. Seven lodging buildings are on the parcel of land, and they would all be demolished as the apartment project is implemented.

To assist us in identifying environmental issues that may affect the implementation of this project, please provide written comments to: Suzanne Teague, Directorate of Public Works, Environmental Division, 2212 Chisholm Avenue, Suite 5115, Fort Meade, MD 20755-7068.

Due to project time constraints, we are requesting an expedited 15-day review. You may contact Ms. Teague by email at suzanne.m.teague.civ@mail.mil or by telephone at 301-677-9185 or me at (301) 677-9188 if you have any comments or questions regarding this matter.

Sincerely,

Michael P. Butler
Chief, Environmental Division

Enclosure

DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
US ARMY GARRISON, FORT GEORGE G MEADE
4551 LLEWELLYN AVENUE, SUITE 5000
FORT GEORGE G. MEADE, MARYLAND 20755-5000

REPLY TO
ATTENTION OF:

FEB 10 2012

Directorate of Public Works

Mr. Bill Arguto
U.S. Environmental Protection Agency
Region 3
1650 Arch Street
Philadelphia, PA 19106

Dear Mr. Arguto:

On behalf of Fort George G. Meade, Picerne Military Housing, LLC (Picerne) is preparing an Environmental Assessment (EA) for the proposed construction of single and unaccompanied personnel garden-style apartments on Fort Meade. The EA is being prepared in accordance with the National Environmental Policy Act of 1969, as amended.

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Sincerely,

Michael P. Butler
Chief, Environmental Division

Enclosure

DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
US ARMY GARRISON, FORT GEORGE G MEADE
4551 LLEWELLYN AVENUE, SUITE 5000
FORT GEORGE G. MEADE, MARYLAND 20755-5000

REPLY TO
ATTENTION OF:

FEB 10 2012

Directorate of Public Works

Mr. Leopold Miranda
Chesapeake Bay Field Office
U,S. Department of the Interior
Fish and Wildlife Service
177 Admiral Cochrane Drive
Annapolis, Maryland 21401

Dear Mr. Miranda:

On behalf of Fort George G. Meade, Picerne Military Housing, LLC (Picerne) is preparing an Environmental Assessment (EA) for the proposed construction of single and unaccompanied personnel garden-style apartments on Fort Meade. The EA is being prepared in accordance with the National Environmental Policy Act of 1969, as amended.

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The parcel of land on which the apartment buildings are to be constructed is a 45-acre tract at the northeast corner of the intersection of Cooper Avenue and Mapes Road, bounded on the north by Reece Road. Existing trees and vegetation would be retained to the extent allowed by development constraints, but the proposed action would result in the removal of approximately 21.6 acres of wooded areas on Fort Meade. Enclosed is a copy of the proposed project area.

The initial project development period would last from June 2012 through August 2015. Seven lodging buildings are on the parcel of land, and they would all be demolished as the apartment project is implemented.

To assist us in identifying environmental issues that may affect the implementation of this project, please provide written comments to: Suzanne Teague, Directorate of Public Works, Environmental Division, 2212 Chisholm Avenue, Suite 5115, Fort Meade, MD 20755-7068.

Due to project time constraints, we are requesting an expedited 15-day review. You may contact Ms. Teague by email at suzanne.m.teague.civ@mail.mil or by telephone at 301-677-9185 or me at (301) 677-9188 if you have any comments or questions regarding this matter.

Sincerely,

Michael P. Butler

Michael P. Butler
Chief, Environmental Division

Enclosure

DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
US ARMY GARRISON, FORT GEORGE G MEADE
4551 LLEWELLYN AVENUE, SUITE 5000
FORT GEORGE G. MEADE, MARYLAND 20755-5000

REPLY TO
ATTENTION OF:

FEB 10 2012

Directorate of Public Works

Ms. Brigid E. Kenney
Office of the Secretary
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, Maryland 21230

Dear Ms. Kenney:

On behalf of Fort George G. Meade, Picerne Military Housing, LLC (Picerne) is preparing an Environmental Assessment (EA) for the proposed construction of single and unaccompanied personnel garden-style apartments on Fort Meade. The EA is being prepared in accordance with the National Environmental Policy Act of 1969, as amended.

Under the proposed action, Picerne would construct 17 apartment buildings that would include approximately 40 one-bedroom and 388 two-bedroom apartments, providing a total of 816 bedrooms. The apartment complex would provide housing for Junior Enlisted Service Members. Amenities would include a 6,000-square-foot community clubhouse with a swimming pool, fitness center, media center, club room, landscaped barbeque areas, and gathering spaces. Development density would be 10 living units per acre.

The parcel of land on which the apartment buildings are to be constructed is a 45-acre tract at the northeast corner of the intersection of Cooper Avenue and Mapes Road, bounded on the north by Reece Road. Existing trees and vegetation would be retained to the extent allowed by development constraints, but the proposed action would result in the removal of approximately 21.6 acres of wooded areas on Fort Meade. Enclosed is a copy of the proposed project area.

The initial project development period would last from June 2012 through August 2015. Seven lodging buildings are on the parcel of land, and they would all be demolished as the apartment project is implemented.

To assist us in identifying environmental issues that may affect the implementation of this project, please provide written comments to: Suzanne Teague, Directorate of Public Works, Environmental Division, 2212 Chisholm Avenue, Suite 5115, Fort Meade, MD 20755-7068.

Due to project time constraints, we are requesting an expedited 15-day review. You may contact Ms. Teague by email at suzanne.m.teague.civ@mail.mil or by telephone at 301-677-9185 or me at (301) 677-9188 if you have any comments or questions regarding this matter.

Sincerely,

Michael P. Butler
Chief, Environmental Division

Enclosure

Maryland Department of Planning

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

Richard Eberhart Hall
Secretary
Matthew J. Power
Deputy Secretary

February 14, 2012

Mr. Michael Butler
Chief, Environmental Division, Installation Management Command
U.S. Department of the Army
4551 Llewellyn Avenue, Suite 5000
Fort Meade, MD 20755-5000

STATE CLEARINGHOUSE REVIEW PROCESS

State Application Identifier: MD20120214-0093
Reply Due Date: 02/27/2012
Project Description: Scoping prior to E.A.: proposed construction of 17 apartment buildings, total of 816 bedrooms for single and unaccompanied personnel: remove +/- 21.6 acres of wooded area; demolish 7 lodging buildings
Project Address: intersection of Cooper Avenue, and Mapes Road, Fort Meade, MD 20755-7068
Project Location: County of Anne Arundel
Clearinghouse Contact: Bob Rosenbush

Dear Mr. Butler:

Thank you for submitting your project for intergovernmental review. Your participation in the Maryland Intergovernmental Review and Coordination (MIRC) process helps to ensure that your project will be consistent with the plans, programs, and objectives of State agencies and local governments.

We have forwarded your project to the following agencies and/or jurisdictions for their review and comments: the Maryland Departments of Transportation, the Environment, Natural Resources, Housing and Community Development; the Maryland Military Department; the County of Anne Arundel; and the Maryland Department of Planning; including the Maryland Historical Trust. A composite review and recommendation letter will be sent to you by the reply due date. Your project has been assigned a unique State Application Identifier that you should use on all documents and correspondence.

Please be assured that we will expeditiously process your project. The issues resolved through the MIRC process enhance the opportunities for project funding and minimize delays during project implementation.

If you need assistance or have questions, contact the State Clearinghouse staff noted above at 410-767-4490 or through e-mail at brosenbush@mdp.state.md.us. Thank you for your cooperation with the MIRC process.

Sincerely,

Linda C. Janey

Linda C. Janey, J.D., Assistant Secretary

LCJ:BR

cc: Suzanne Teague – Army

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301 West Preston Street • Suite 1101 • Baltimore, Maryland 21201-2305
Telephone: 410.767.4500 • Fax: 410.767.4480 • Toll Free: 1.877.767.6272 • TTY Users: Maryland Relay
Internet: Planning.Maryland.gov

Maryland Department of Planning

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

Richard Eberhart Hall
Secretary
Matthew J. Power
Deputy Secretary

February 23, 2012

Mr. Michael Butler
Chief, Environmental Division, Installation Management Command
U.S. Department of the Army
4551 Llewellyn Avenue, Suite 5000
Fort Meade, MD 20755-5000

STATE CLEARINGHOUSE REVIEW – ADDITIONAL REVIEWER COMMENTS RECEIVED

State Application Identifier: MD20120214-0093
Project Description: Scoping prior to E.A.: proposed construction of 17 apartment buildings, total of 816 bedrooms for single and unaccompanied personnel: remove +/- 21.6 acres of wooded area; demolish 7 lodging buildings
Project Address: intersection of Cooper Avenue, and Mapes Road, Fort Meade, MD 20755-7068
Project Location: Anne Arundel County
Clearinghouse Contact: Bob Rosenbush

Dear Mr. Butler:

We are forwarding the comments made by this Department regarding the referenced project for your information. The Maryland Department of Planning stated that the project is consistent with its plans, programs, and objectives. The Maryland Department of Planning also expressed its concerns about the extensive loss of forest land that was described in the Scoping letter. Fort Meade should have a reforestation plan to replace lost forest. The Maryland Department of Housing and Community Development had no comment.

Should you have any questions, contact the State Clearinghouse staff person noted above at 410-767-4490 or through e-mail at brosenbush@mdp.state.md.us. Your cooperation and attention to the review process is appreciated.

Sincerely,

Linda C. Janey

Linda C. Janey, J.D., Assistant Secretary

LCJ: BR

cc: Suzanne Teague - Army
Hara Wright-Smith - DHCD

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MDP
Maryland Department of Planning
Maryland Historical Trust

Martin O'Malley
Governor

Anthony G. Brown
Lt. Governor

Richard Eberhart Hall
Secretary

Matthew J. Power
Deputy Secretary

April 4, 2012

Jerry Glodek
Fort Meade Directorate of Public Works
2212 Chisholm Ave. Suite 5115
Fort Meade, MD 20755-7068

Re: Area G2 (Picerne Military Housing additional facilities)
Including Buildings 4721, 4720, 4717, 4709, 4707, 4705, 4704 and 4703
Section 106 Compliance
Anne Arundel County, Maryland

Dear Mr. Glodek:

Thank you for providing the Maryland Historical Trust (Trust), the State Historic Preservation Office, with the additional information requested in our December 7, 2011 letter. The Trust is reviewing the above-referenced undertaking with respect to potential effects on historic properties, pursuant to Section 106 of the National Historic Preservation Act. Trust staff carefully reviewed your submittal, and we offer the following comments.

The Maryland Inventory of Historic Properties does not contain any information about the history or condition of the buildings listed above and proposed for demolition. Depending on the significance and integrity of the buildings they may be eligible for listing in the National Register of Historic Places. Since these buildings will be directly affected by the proposed undertaking, they should be evaluated for National Register eligibility pursuant to provision 36 CFR part 800.4. The Trust should be provided with the following information, which will allow us to help identify historic properties that might be affected by the undertaking and begin assessing the possible effects of the project on them.

- Determination of Eligibility (DOE) form for each building type proposed for demolition.

DOE forms must contain sufficient description of buildings, structures, areas of land use, and the overall landscape of a property to evaluate its significance under National Register Criterion C and its historic integrity. This should include information about feature age, form, stylistic elements, methods of construction, materials, and condition. Forms must also contain sufficient historical context to evaluate a property under National Register Criteria A and B. This should include information derived from historic maps and land records; examination of the existing buildings, structures, and landscape as historical sources; and relevant information from existing reports and other secondary sources. All DOE forms must be completed by a qualified architectural historian, preservationist, or historian and be accompanied by supporting materials as described in *General Guidelines for Compliance-Generated Determinations of Eligibility* and *Standards and Guidelines for Architectural and Historical Investigations in Maryland.*

A list of preservation consultants can be found on our website at www.mht.maryland.gov. When you submit this additional documentation please also include a site plan, architectural renderings/plans and a description of the proposed new construction so the Trust can review its potential effects on historic properties. If you have any questions or require further information, please do not hesitate to contact me at 410-514-7630 \ aapple@mdp.state.md.us.

Sincerely,

Amanda R. Apple
Preservation Officer
CC: Brian Wolfe, Bowman Consulting Group
Suzanne Teague (Ft. Meade)
ARA/201201191/201200659

100 Community Place • Crownsville, Maryland 21032-2023
Telephone: 410.514.7600 • Fax: 410.987.4071 • Toll Free: 1.800.756.0119 • TTY Users: Maryland Relay
Internet: http://mht.maryland.gov

Maryland Department of Planning

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

Richard Eberhart Hall
Secretary
Matthew J. Power
Deputy Secretary

April 11, 2012

Ms. Aimee Stafford
Project Manager, Directorate of Public Works
RCI Housing Division
4463 Leonard Wood Avenue
Fort Meade, MD 20755

STATE CLEARINGHOUSE REVIEW PROCESS

State Application Identifier: MD20120411-0230
Reply Due Date: 05/05/2012
Project Description: E.A. and Draft FONSI: proposed 50-year ground lease of +/- 45 acres to Picerne Military Housing to construct and operate single and unaccompanied personnel apartments, and associated facilities: 8 buildings now on the parcel (see MD20120214-0093)
Project Address: Fort George G. Meade, northeast corner of intersection Cooper Avenue, Mapes Road
Project Location: County of Anne Arundel
Clearinghouse Contact: Bob Rosenbush

Dear Ms. Stafford:

Thank you for submitting your project for intergovernmental review. Your participation in the Maryland Intergovernmental Review and Coordination (MIRC) process helps to ensure that your project will be consistent with the plans, programs, and objectives of State agencies and local governments.

We have forwarded your project to the following agencies and/or jurisdictions for their review and comments: the Maryland Department(s) of Business and Economic Development, Housing and Community Development, Transportation, the Environment, Natural Resources; the Maryland Military Department; and the Maryland Department of Planning; including the Maryland Historical Trust. A composite review and recommendation letter will be sent to you by the reply due date. Your project has been assigned a unique State Application Identifier that you should use on all documents and correspondence.

Please be assured that we will expeditiously process your project. The issues resolved through the MIRC process enhance the opportunities for project funding and minimize delays during project implementation.

If you need assistance or have questions, contact the State Clearinghouse staff noted above at 410-767-4490 or through e-mail at brosenbush@mdp.state.md.us. Thank you for your cooperation with the MIRC process.

Sincerely,

Linda C. Janey

Linda C. Janey, J.D., Assistant Secretary

LCJ:BR

cc: Sam Pett - Tetra Tech

12-0230_NRR.NEW.doc

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor
John R. Griffin, Secretary
Joseph P. Gill, Deputy Secretary

December 8, 2011

Brian Wolfe
Bowman Consulting Group
2530 Riva Rd., Suite 200
Annapolis, MD 21401

RE: Environmental Review for Fort Meade Area G2, Fort Meade, BCG Job #5319-01-001, near Mapes Rd. and Cooper Ave., Anne Arundel County, MD.

Dear Mr. Wolfe:

The Wildlife and Heritage Service has determined that there are no State or Federal records for rare, threatened or endangered species within the boundaries of the project site as delineated. As a result, we have no specific comments or requirements pertaining to protection measures at this time. This statement should not be interpreted however as meaning that rare, threatened or endangered species are not in fact present. If appropriate habitat is available, certain species could be present without documentation because adequate surveys have not been conducted.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at (410) 260-8573.

Sincerely,

Lori A. Byrne

Lori A. Byrne,
Environmental Review Coordinator
Wildlife and Heritage Service
MD Dept. of Natural Resources

ER# 2011.1517.aa

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor
John R. Griffin, Secretary
Joseph P. Gill, Deputy Secretary

April 27, 2012

Ms. Aimee Stafford
RCI Housing Division
Directorate of Public Works
4463 Leonard Wood Avenue
Fort Meade, MD 20755

RE: Environmental Review for Fort George G. Meade – Picerne Military Housing LLC – proposed construction of Single Personnel Garden-Style Apartments, between Mapes/Cooper/Reece Road, Anne Arundel County, Maryland.

Dear Ms. Stafford:

The Wildlife and Heritage Service has determined that there are no State or Federal records for rare, threatened or endangered species within the boundaries of the project site as delineated. As a result, we have no specific comments or requirements pertaining to protection measures at this time. This statement should not be interpreted however as meaning that rare, threatened or endangered species are not in fact present. If appropriate habitat is available, certain species could be present without documentation because adequate surveys have not been conducted.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at (410) 260-8573.

Sincerely,

Lori A. Byrne

Lori A. Byrne,
Environmental Review Coordinator
Wildlife and Heritage Service
MD Dept. of Natural Resources

ER# 2012.0491.aa

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

FEB 2 7 2012

Suzanne Teague
Director of Public Works
Environmental Division
2212 Chisholm Avenue, Suite 5115
Fort Meade, Maryland 20755-7068

RE: Fort George G. Meade, Picerne Military Housing, LLC, Anne Arundel County, Maryland

Dear Ms. Teague:

EPA has received and reviewed your February 10, 2012 letter regarding Picerne Military Housing, LLC located at Fort George G. Meade in Anne Arundel County, Maryland and any potential environmental issues that may need to be considered during the preparation of an Environmental Assessment (EA). The proposed project involves the construction of 17 apartment buildings that would include approximately 40 one-bedroom and 388 two-bedrooms, with a total of 816 bedrooms. Construction would also include amenities of a 6,000-square-foot clubhouse with pool, fitness center, media center, club room, barbeque areas, and gathering spaces. Based on the limited information provided in your letter, we are unable to provide a comprehensive set of comments.

Information regarding the purpose and need, alternatives analyzed, avoidance and minimization of resources, and cumulative effects for the proposed project should be included in the EA. The purpose and need statement is important because it helps explain why the proposed action is being undertaken and what objectives the project intends to achieve. The purpose of the proposed action is typically the specific objective of the activity. The need should explain the underlying problem for why the project is necessary. The currently proposed project is very detailed, the project purpose and need should be much broader as it is unlikely that the proposed action is the only alternative that will meet identified needs. The alternatives analysis should include alternate site layouts and alternative parcels.

EPA encourages that adverse impacts to natural resources, especially wetlands and other aquatic resources, should be avoided and minimized wherever possible. The map provided appears to show intermittent stream on the site. The EA should describe the total size or length of wetland or stream, and impact amount by each proposed alternative. Stormwater ponds and best management practices (BMPs) should not be located in wetlands and streams. Another area of potential concern is the project's affect on air quality in the study area. Based on information available to EPA, the study area is located within non-attainment areas for both ozone and PM-2.5.

The February 10, 2012 letter briefly describes potential impacts to forests from the proposed action, which would result in the removal of approximately 21.6 acres of wooded areas. The total tract being considered is 45 acres; the amount of proposed forest to be removed appears to be close to all of the forest that exists on site. EPA suggests that additional avoidance and minimization opportunities be considered, as well as the possible inclusion of low impact development techniques where appropriate. EPA also suggests coordinating with appropriate federal, state and local official regarding potential forest loss and any affects on rare, threatened or endangered species. It would also be recommended to coordinate with these agencies on possible impacts to forest interior dwelling species and habitat. The area may be a wildlife hub or corridor as defined by Maryland Department of Natural Resources' Green Infrastructure assessment. Consider ways to minimize impacts to wildlife passage.

EPA is aware of several other past, present, and reasonably foreseeable projects occurring in the area of the proposed project, including improvements to Maryland Route 198 and 175, the proposed Anne Arundel Gateway project, the proposed Tipton substation, as well as other improvements on Fort Meade. EPA strongly encourages a thorough cumulative impact analysis for past, present and reasonably foreseeable projects occurring in the project area. EPA is concerned about the potential for indirect and cumulative effects in this area.

Thank you for coordinating with EPA on this project. We look forward to working with you on this project as more information becomes available. If you have any questions and would like to discuss our comments, the staff contact for this project is Ms. Alaina DeGeorgio; she can be reached at 215-814-2741 or degeorgio.alaina@epa.gov.

Sincerely,

Barbara Rudnick
NEPA Team leader
Office of Environmental Programs

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

May 4, 2012

Ms. Aimee Stafford
RCI Housing Division
Directorate of Public Works
4463 Leonard Wood Avenue
Fort Meade, MD 20755

Re: Final Environmental Assessment for the Construction and Operation of Single and Unaccompanied Personnel Apartments at Fort George G. Meade, Maryland

Dear Ms. Stafford:

In accordance with the National Environmental Policy Act (NEPA) of 1969, Section 309 of the Clean Air Act and the Council on Environmental Quality regulations implementing NEPA (40 CFR 1508), the U.S. Environmental Protection Agency has reviewed the Final Environmental Assessment (EA) for the Construction and Operation of Single and Unaccompanied Personnel Apartments at Fort George G. Meade in Maryland.

The purpose of the Proposed Action is to provide a 50-year lease on 45-acres of land on Fort Meade to a private development entity (Picerne) to build on-post housing in the form of garden-style apartments for Junior Enlisted Service Members. The new community would consist of approximately 40 one-bedroom and approximately 388 two-bedroom apartments, providing a total of approximately 815 bedrooms. The Proposed Action is needed because more than 50 percent of Junior Enlisted Service Members on Fort Meade are displaced and living off-post.

The Army identified two alternatives: the Preferred Alternative (use of 45-acre parcel of land in the cantonment area) and the No Action Alternative. The proposed parcel contains eight buildings in the central and southern portion and three wooded areas which covers 21.6 acres of the 45-acre parcel. Picerne would construct up to 17 apartment buildings and amenities, including a 6000-square-foot community clubhouse with a swimming pool, fitness center, media center, club room, landscaped barbeque areas, and gathering spaces. Development density would be 10 living units per acre.

EPA has provided comments and questions for your consideration in the Technical Comments document which is enclosed. EPA requires additional information to assess the impacts to the environment and natural resources. EPA questions if alternative design plans were considered to avoid Forest Conservation Area; this could include alternative location or design. Preservation of forest resource has human and ecosystem benefit. Specific comments address

concerns with alternatives analysis, biological/terrestrial resources as well as water/aquatic resources.

Thank you for the opportunity to review and comment on this project. If you have any questions regarding these comments, please feel free to contact the principle reviewer for the project, Karen DelGrosso at 215-814-2765.

Sincerely,

Barbara Rudnick
NEPA Team Leader

Enclosure (1)

Fort Meade Response to EPA Comments: Final Environmental Assessment for the Construction and Operation of Single and Unaccompanied Personnel Apartments at Fort George G. Meade, Maryland

Alternative Analysis/Land Use

EPA Comment: *As described in the regulations for the Council on Environmental Quality (CEQ) (40 CFR 1502.14), the examination and comparison of the alternatives under consideration is the heart of the environmental document. It is through this comparison that the lead agency is able to incorporate inter-agency and public input to make informed decisions with regard to the merits of the project and the advantages and disadvantages of each of the alternatives being studied.*

The Final EA addresses two alternatives, the Preferred Alternative (Construction of the 17 apartment buildings and amenities on the 45-acre parcel between Cooper Avenue, Mapes Road, MacArthur Road and Reece Road) and the No Action Alternative. The Final EA states that Fort Meade and Picerne investigated the feasibility of alternative sites for development. However, land constraints (including those imposed by BRAC 2005 action and those that could be imposed by the Enhanced Use Lease (EUL) action) and preferred uses for other available sites were eliminated from further consideration for the proposed apartments land use. BRAC 2005 and EUL actions could result in an estimated combined population change of approximately 15,695 personnel at the installation and an estimated area of development totaling about 5.7 million square feet.

EPA appreciates that the Army and Picerne investigated the feasibility of alternative sites for development; however, having presented only one action alternative, there is no means of comparison. In addition, considering that of the 45-acre parcel, 21.6 acres are forested areas of which 19.6 acres is designated as Forest Conservation Areas, EPA questions whether alternative design plans on the parcel were considered so as to avoid impacts to the Forest Conservation Areas. In particular, has high rise apartment buildings and raised parking garages been considered to reduce building footprint in an effort to preserve and prevent adverse impact to the forested areas and biological resources that use these areas as their habitat? It would be appropriate to show the Forest Conservation Area in view of Maryland Department of Environment (MDE) identification of hubs and corridors in the State "Green Infrastructure"; the natural passage ways for wildlife. MDE has identified areas that should be protected for wildlife. Also, with proposed BRAC 2005 and EUL actions involving an increase in population and development, EPA questions the amount of forested areas yet to be lost due to future development. Every effort should be made to protect and preserve as much of this resource through site planning and development.

FGGM Response: Fort George G. Meade (FGGM) selected the proposed site that is discussed in the EA based on current and future planning requirements, proximity of the apartments to activity and community centers on the installation, and compatibility of the intended use

(residential) with surrounding land uses. The design of the apartments (three story and three-story/four-story split buildings) was selected for compliance with installation design guidelines, character of the community and its architectural context relative to adjacent developments. Alternative sites without Forest Conservation Areas were considered initially in the project planning phase. These two alternative sites, which were also within proximity to the activity and community centers, were removed from consideration since they were selected for other construction projects. These same two sites are currently the subject of study under separate Environmental Assessments.

It is important to understand the context of the term, "Forest Conservation Area" with regards to FGGM lands. "Forest Conservation Area" located within the proposed project boundary was self-designated by FGGM for forest management and conservation purposes. Unfortunately, mission requirements dictate a change in this land use. Of the approximately 21 acres of "Forest Conservation Area" on this project site, only 2.47 acres or less was preserved or reforested to mitigate past developments in accordance with the Maryland Forest Conservation Act (FCA). This project will avoid these areas to the maximum extent practical and comply with the current *Fort Meade Forest Conservation Act and Tree Management Policy*.

Wetlands/Water Resources/Aquatic Resources

EPA Comment: *Page 2-1 "There are no known wetlands on the parcel, but a stream channel measuring approximately 312 linear feet long leads from a culvert under Reece Road, through the northern wooded area on the parcel. The street connects to a concrete-lined ditch that parallels the northernmost parking lot on the parcel and leads to Cooper Avenue. The parcel slopes gradually down from the north toward the southwest, with a total change of elevation of approximately 20 feet." Page 3-11 states, "The stream is identified as being intermittent (a stream with some natural base flow) (Bowman Consulting 2011a). Another concrete ditch parallels Cooper Avenue in the northwestern portion of the parcel."*

Page 3-12 states, "It is anticipated that the entire length of the stream would be impacted in some way by the proposed project, though methods to reduce the amount of impact will be determined during final site design and layout and in consultation with MDE and the U.S. Army Corps of Engineers. A Jurisdictional Permit Application/wetlands permit for stream impacts will be submitted to MDE and the U.S. Army Corps of Engineers for review and approval. The Coastal Zone Federal Consistency Determination statement will be covered and included in the permit language and approval from MDE. Any impacts to the potential intermittent stream that cannot be avoided will be permitted in accordance with state and federal law."

The EA did not provide information on the concrete ditch that parallels Cooper Avenue nor

did it discuss if the identified intermittent stream supports aquatic life. Please provide information on the concrete ditch and indicate if the intermittent stream supports flow-dependent aquatic life. If improvement to stream conditions can be made, it should be considered in Fort Meade planning. Improvements to stormwater management might give uplift to aquatic resources and habitat.

FGGM Response: The preliminary wetland delineation did not identify the concrete ditch as a Waters of the U.S. Details on the concrete ditch were not deemed relevant to the analysis of effects. The intermittent stream reach, as detailed in the EA, is primarily fed by stormwater runoff from a stormwater retention pond north of Reece Road, drains into the concrete ditch, is piped underneath a developed site and is disbursed via sheet flow into the floodplain of the Midway Branch. Due to a seasonal flow regime and previously disrupted hydrology and stream geomorphology, this reach is not likely to support significant aquatic resources. Picerne and the Army are concerned about the impact of the project on the stream, and after further design work, the total impact (at this time) has been reduced from 312 linear feet to 159 linear feet. A site visit by MDE and USACE regulators is currently scheduled and the project will fully comply with the regulatory determinations.

Biological/Terrestrial Resources

EPA Comment: *Page 3-12 states, "The northern wooded area along Reece Road (forest stands A and B) and the southeastern wooded area north of Mapes Road (forest stand D) on the subject parcel are designated as Forest Conservation Areas for Fort Meade (USACE Mobile District 2007). Under the Maryland Forest Conservation Act, 20 percent of forest conservation areas must be preserved as Forest Conservation Mitigation Areas to mitigate project effects."*

Page 2-3 states, "Existing trees and vegetation would be retained to the extent allowed by development constraints. Figure 2-2 provides a preliminary project site plan." When viewing Figure 2-2 (Concept Plan), it appears as if a portion of the forested areas may be retained. However, Section 3.14 Mitigation, states "A forest mitigation plan will be prepared and submitted to DPW-ED and MDNR for approval for the clearing of the 21.6 acres of wooded area." Please clarify and explain if a portion of the forested areas will be retained and if so quantify and discuss if the retained portion of forested areas would equate to the 20 percent preservation as required by the Maryland Forest Conservation Act.

Page 3-15 states, "In accordance with the requirements of the Endangered Species Act, agency coordination with the U.S. Fish and Wildlife Service and MDNR's Natural Heritage Program to identify state and federal listed species is being conducted. MDNR responded to

a request for information on December 8, 2011, stating that it has no records of state or federal listed species within the boundaries of the subject parcel (Appendix A)." Since the Distribution List does not list the U.S. Fish and Wildlife Service as having been sent a copy of the EA, EPA questions coordination with the U.S. Fish and Wildlife Service.

The most recent state and federal threatened and endangered species coordination letters should be included in the EA. In addition, EPA recommends that the appropriate state and federal agencies be contacted annually at a minimum regarding these issues. Thus, consultation with the U.S. Fish and Wildlife Service is suggested.

Page 3-15 states "The development would eliminate much of the vegetation on the parcel and much of the wildlife that occupies it would likely move to other unimproved areas on the installation." Where are the other unimproved areas in relation to the project area and is there connectivity? Discuss whether corridors are affected and include an analysis of forest fragmentation.

FGGM Response: Final site design has not occurred yet, so it is not known exactly how much forest area will be retained. The EA assumes all 21.6 acres will be lost for the purpose of impact analysis, but Picerne and the Army are working to design the site to retain as much forest as practical. Any portion of the forested areas that is retained together with mitigation through implementation of the DPW-ED- and MDNR-approved forest mitigation plan will comply with the 20 percent requirement of the Maryland Forest Conservation Act and the current *Fort Meade Forest Conservation Act and Tree Management Policy*.

The project does not disrupt corridors and hubs identified by MD DNR or FGGM. The project contains the terminus of a Forest Conservation Area. The Forest Conservation Area inside the project boundary has already been fragmented by previous developments unrelated to this project and was disturbed as early as the 1930's. Project proponents have been requested to maintain remaining forest connectivity to the maximum extent practical. However, due to stormwater regulations and antiterrorism/force protection setbacks, additional fragmentation is likely to occur.

The majority of this forest land does not have adequate advanced regeneration/natural replacement trees, likely due to past disturbance and deer browse, and overall would be designated as being "fair" quality at best. Virginia pine (*Pinus virginiana*) comprises a significant component of the canopy within the Forest Conservation Area inside the project boundary and is experiencing mortality due to its age.

Regarding coordination with the USFWS, a review copy of the EA was delivered to the USFWS Chesapeake Bay office on April 4, 2012 at 10:46 a.m. The Chesapeake Bay Field Office of the USFWS is included on the distribution list in the EA. No response from the Service has been received. An early coordination letter (a copy of which is in Appendix A of the EA) was sent to USFWS on February 10, 2012; no response was received.

Wildlife movement is anticipated to move north, northwest towards the Midway Branch. FGGM

has started reforesting an abandoned golf course hole to the north of the project area. It is also important to note that FGGM has targeted the Midway branch for reforestation efforts. This effort, adjacent to the project area, will restore a forested corridor than runs throughout the installation. Portions of the Midway branch have been reforested as recent as 2010 and a future project has targeted the opposite streambank and floodplain for reforestation.

Chesapeake Bay Executive Order 13508

EPA Comment: *Section 1.6, Environmental Laws and Regulations, lists various laws, regulations, and Executive Orders that the Proposed Action must comply with. Since the Proposed Action is within the Chesapeake Bay Watershed, it is the responsibility of the Department of the Army to comply with and address the requirements of Executive Order 13508.*

The Executive Order provides information and data on land management practices for federal agencies with land, facilities, or installation management responsibilities affecting ten or more acres within the watershed of the Chesapeake Bay to contribute towards the restoration of the Chesapeake Bay and its watershed. As required by Section 502 of the Executive Order, this document (1) provides guidance for federal land management in the Chesapeake Bay and (2) describes proven, cost-effective tools and practices that reduce water pollution, including practices that are available for use by federal agencies. Federal agencies in the Chesapeake Bay watershed will find this guidance useful in managing their lands, ranging from the development and redevelopment of federal facilities to managing agricultural, forested, riparian, and other land areas the federal government owns or manages. Please address Executive Order 13508 in relation to the Proposed Action and adherence to Section 502 Guidance which can be accessed at http://executiveorder.chesapeakebay.net.

FGGM Response: In accordance with EO 13508 Section 502, *EPA Guidance for Federal Land Management in the Chesapeake Bay Watershed*, the project will minimize watershed impacts by using MDE stormwater standards that require restoring runoff to forested, predevelopment conditions and treating stormwater on site. While the entire forested parcel cannot be preserved in order to accomplish mission requirements, remaining forested areas will continue to perform limited ecosystem services such as interception and stormwater control. Lastly, the project will also use native plant material in landscaping to the maximum extent practical. Picerne, the Army, and the EA ensure that all Maryland stormwater requirements will be met during and after construction.

Public Involvement/Distribution List

EPA Comment: *Page 1-3 states, "The Army invites public participation in the NEPA process. Agencies, organization, Native American tribes, and members of the public having a potential interest in the proposed action, including minority, low-income, and disadvantaged groups are urged to participate in the decision-making process." Page 3-17 states "To date, no tribe has expressed interest in FGGM projects." What outreach measures has Fort Meade used to engage interested parties? The Distribution List did not indicate distribution of the EA to a tribe(s) or the Maryland Historic Trust (MHT) which serves as Maryland's State Historic Preservation Office. Because the 45-acre preferred site abuts the Fort Meade Historic District's northern boundary, it would seem prudent to consult with the MHT early in the planning process.*

FGGM Response: The Maryland Historic Trust was coordinated with through the Maryland State Clearinghouse, to which the EA was distributed. Further coordination with the MHT is currently ongoing. Fort Meade has previously coordinated with Native American tribes through the Integrated Cultural Resource Management Plan in accordance with the American Indian Religion Freedom Act and Native American Graves Protection and Repatriation Act. Through this process, no tribe has expressed interest in FGGM projects to date. Additionally, no traditional cultural properties or Native American sacred sites have been recorded at Fort Meade.

Appendix B

Record of Non-Applicability (RONA) and Emission Calculations

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RECORD OF NON-APPLICABILITY

In Accordance with the Clean Air Act General Conformity Rule For
the Proposed Single and Unaccompanied Personnel Apartments

Fort George G. Meade, Maryland

April 2, 2012

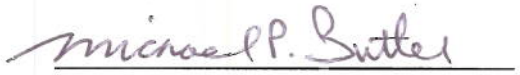
The Army proposes to grant a 50-year lease of approximately 45 acres of land on Fort George G. Meade, Maryland to Picerne Military Housing (Picerne), on which Picerne would demolish eight existing buildings and construct and operate an 816-bedroom garden-style apartment community for single and unaccompanied personnel. The action would generate new direct and indirect emissions from the construction and operation of the facilities.

General Conformity under the Clean Air Act, Section 176 has been evaluated according to the requirements of Title 40 of the Code of Federal Regulations Part 93, Subpart B. The requirements of this rule are applicable to the action because:

The highest total annual direct and indirect emissions from this proposed action or any of the alternatives have been estimated at 20.0 tons of nitrous oxides (NO_x), 4.8 tons of volatile organic compounds (VOCs), 2.2 tons fine particulate matter ($PM_{2.5}$), and less than 0.1 ton sulfur dioxide (SO_2) per year, which would be below the applicability threshold values of 50 tons VOCs and 100 tons for SO_2, $PM_{2.5}$, and NO_x.

Supported documentation and emission estimates:

(X) Are attached
( ) Appear in the National Environmental Policy Act documentation
( ) Other (not necessary)



Signature

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Table B-1 Construction Equipment Use

Equipment Type	Number of Units	Days on Site	Hours Per Day	Operating Hours
Excavators Composite	2	230	4	1840
Rollers Composite	2	230	8	3680
Rubber Tired Dozers Composite	2	230	8	3680
Plate Compactors Composite	4	230	4	3680
Trenchers Composite	4	116	8	3712
Air Compressors	4	230	4	3680
Cement & Mortar Mixers	4	230	6	5520
Cranes	2	230	7	3220
Generator Sets	4	230	4	3680
Tractors/Loaders/Backhoes	4	230	7	6440
Pavers Composite	2	116	8	1856
Paving Equipment	4	116	8	3712

Table B-2 Construction Equipment Emission Factors (lbs/hour)

Equipment	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$	CO_2
Excavators Composite	0.5828	1.3249	0.1695	0.0013	0.0727	0.0727	119.6
Rollers Composite	0.4341	0.8607	0.1328	0.0008	0.0601	0.0601	67.1
Rubber Tired Dozers Composite	1.5961	3.2672	0.3644	0.0025	0.1409	0.1409	239.1
Plate Compactors Composite	0.0263	0.0328	0.0052	0.0001	0.0021	0.0021	4.3
Trenchers Composite	0.5080	0.8237	0.1851	0.0007	0.0688	0.0688	58.7
Air Compressors	0.3782	0.7980	0.1232	0.0007	0.0563	0.0563	63.6
Cement and Mortar Mixers	0.0447	0.0658	0.0113	0.0001	0.0044	0.0044	7.2
Cranes	0.6011	1.6100	0.1778	0.0014	0.0715	0.0715	128.7
Generator Sets	0.3461	0.6980	0.1075	0.0007	0.0430	0.0430	61.0
Tractors/Loaders/Backhoes	0.4063	0.7746	0.1204	0.0008	0.0599	0.0599	66.8
Pavers Composite	0.5874	1.0796	0.1963	0.0009	0.0769	0.0769	77.9
Paving Equipment	0.0532	0.1061	0.0166	0.0002	0.0063	0.0063	12.6

Source: CARB 2007a and 2007b

Note (for this and all subsequent tables in this appendix): CO=carbon monoxide, CO_2=carbon dioxide, NO_x=oxides of nitrogen, PM_{10}=particulate matter, $PM_{2.5}$=fine particulate matter, SO_x=sulfur oxides, VOC=volatile organic compounds

Table B-3 Construction Equipment Emissions (Tons per Year)

Equipment	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$	CO_2
Excavators Composite	0.5362	1.2189	0.1559	0.0012	0.0669	0.0669	110.0147
Rollers Composite	0.7987	1.5837	0.2443	0.0014	0.1106	0.1106	123.3773
Rubber Tired Dozers Composite	2.9367	6.0116	0.6705	0.0045	0.2592	0.2592	439.9544
Plate Compactors Composite	0.0485	0.0604	0.0095	0.0001	0.0038	0.0038	7.9374
Trenchers Composite	0.9429	1.5288	0.3435	0.0013	0.1278	0.1278	108.9867
Air Compressors	0.6958	1.4683	0.2267	0.0013	0.1037	0.1037	117.0375
Cement and Mortar Mixers	0.1235	0.1815	0.0311	0.0003	0.0123	0.0123	20.0049
Cranes	0.9678	2.5922	0.2863	0.0022	0.1152	0.1152	207.1541
Generator Sets	0.6368	1.2843	0.1977	0.0013	0.0791	0.0791	112.2265
Tractors/Loaders/Backhoes	1.3084	2.4941	0.3877	0.0025	0.1928	0.1928	215.1165
Pavers Composite	0.5451	1.0019	0.1822	0.0008	0.0714	0.0714	72.3244
Paving Equipment	0.0988	0.1969	0.0308	0.0003	0.0117	0.0117	23.4374
Total	**9.64**	**19.62**	**2.77**	**0.0173**	**1.15**	**1.15**	**1557.57**

Table B-4 Painting

VOC Content	0.84	lbs/gallon	
Coverage	400	sqft/gallon	
Emission Factor	0.0021	lbs/sqft	
Building/Facility	Wall Surface	VOC [lbs]	VOC [tpy]
All Buildings Combined	1742400	3659.0	1.830
Total	**1742400**	**3659.04**	**1.83**

Source: SCAQMD 1993

Note: lbs=pounds, sqft=square feet, tpy=tons per year

Table B-5 Delivery of Equipment and Supplies

Number of Deliveries	2						
Number of Trips	2						
Miles Per Trip	15						
Days of Construction	230						
Total Miles	13800						
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Emission Factor (lbs/mile)	0.0219	0.0237	0.0030	0.0000	0.0009	0.0007	2.7
Total Emissions (lbs)	302.90	327.23	41.30	0.35	11.81	10.20	37528.2
Total Emissions (tpy)	**0.15**	**0.16**	**0.02**	**0.0002**	**0.01**	**0.01**	**18.76**

Source: CARB 2007a

Table B-6 Surface Disturbance

TSP Emissions	80	lbs/acre				
PM_{10}/TSP	0.45					
$PM_{2.5}$/PM_{10}	0.15					
Period of Disturbance	30	days				
Capture Fraction	0.5					
Building/Facility	**Area [acres]**	**TSP[lbs]**	**PM_{10}[lbs]**	**PM_{10}[tons]**	**$PM_{2.5}$[lbs]**	**$PM_{2.5}$[tons]**
Demolition	26.0	62517	28133	14.07	2110	1.05
Total	**26.0**	**62517**	**28133**	**14.07**	**2110**	**1.05**

Sources: USEPA 1995 and USEPA 2005

Table B-7 Worker Commutes

Number of Workers	50						
Number of Trips	2						
Miles Per Trip	15						
Days of Construction	230						
Total Miles	345000						
Pollutant	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Emission Factor (lbs/mile)	0.0105	0.0011	0.0011	0.0000	0.0001	0.0001	1.1
Total Emissions (lbs)	3639.21	380.49	372.32	3.71	29.34	18.26	379338.6
Total Emissions (tpy)	**1.82**	**0.19**	**0.19**	**0.0019**	**0.01**	**0.01**	**189.67**

Source: CARB 2007a

Table B-8 Total Construction Emissions (Tons per Year)

Activity/Source	**CO**	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Construction Equipment	9.64	19.62	2.77	0.0173	1.15	1.15	1557.57
Painting	0.00	0.00	1.83	0.0000	0.00	0.00	0.00
Delivery of Equipment and Supplies	0.15	0.16	0.02	0.0002	0.01	0.01	18.76
Surface Disturbance	0.00	0.00	0.00	0.0000	14.07	1.05	0.00
Worker Commutes	1.82	0.19	0.19	0.0019	0.01	0.01	189.67
Total Construction Emissions	**11.61**	**19.98**	**4.80**	**0.02**	**15.24**	**2.22**	**1766.01**

Table B-9 Boiler Emissions

Gross Area	871,200	sf				
Heating Requirements	99,000	btu/sf				
Total Annual Heat Required	86,249	MMBTU				
Total Consumption	84,557,647	(cf/yr)				
	CO	**NO_x**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Emission Factors (lb/10^6 cf)[1]	84	190	5.5	0.6	7.6	7.6
Total Emissions (tons)	3.55	8.03	0.23	0.0254	0.32	0.32

1. Natural gas emission factors for all pollutants were obtained from U.S. EPA's AP-42, Section 1.4.

Appendix C

Economic Impact Forecast System (EIFS) Model

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Economic Impact Forecast System (EIFS) Model

Socioeconomic Impact Assessment

Socioeconomic impacts are linked through cause-and-effect relationships. Military payrolls and local procurement contribute to the economic base for the ROI. In this regard, demolition and construction associated with the proposed UPH action on Fort Meade would have a multiplier effect on the local and regional economy. With the proposed action, direct jobs would be created (e.g., construction jobs), generating new income and increasing personal spending. This spending generally creates secondary jobs, increases business volume, and increases revenues for schools and other social services.

The Economic Impact Forecast System

The U.S. Army, with the assistance of many academic and professional economists and regional scientists, developed EIFS to address the economic impacts of NEPA-requiring actions and to measure their significance. As a result of its designed applicability, and in the interest of uniformity, EIFS should be used in NEPA assessments. The entire system is designed for the scrutiny of a populace affected by the actions being studied. The algorithms in EIFS are simple and easy to understand, but still have firm, defensible bases in regional economic theory.

EIFS was developed under a joint project of the U.S. Army Corps of Engineers, the U.S. Army Environmental Policy Institute, and the Computer and Information Science Department of Clark Atlanta University. EIFS is implemented as an on-line system supported by the U.S. Army Corps of Engineers, Mobile District. The system is available to anyone with an approved user-id and password. U.S. Army Corps of Engineers staff is available to assist with the use of EIFS.

The databases in EIFS are national in scope and cover the approximately 3,700 counties, parishes, and independent cities that are recognized as reporting units by federal agencies. EIFS allows the user to define an economic ROI by identifying the counties, parishes, or cities to be analyzed. Once the ROI is defined, the system aggregates the data, calculates multipliers and other variables used in the various models in EIFS, and prompts the user for forecast input data.

The EIFS Model

The basis of the EIFS analytical capabilities is the calculation of multipliers that are used to estimate the impacts resulting from Army-related changes in local expenditures or employment. In calculating the multipliers, EIFS uses the economic base model approach, which relies on the ratio of total economic activity to basic economic activity. Basic, in this context, is defined as the production or employment engaged to supply goods and services outside the ROI or by federal activities (such as military installations and their employees). According to economic base theory, the ratio of total income to basic income is measurable (as the multiplier) and sufficiently stable so that future changes in economic activity can be forecast. This technique is especially appropriate for estimating aggregate impacts and makes the economic base model ideal for the EA and EIS process.

The multiplier is interpreted as the total impact on the economy of the region resulting from a unit change in its base sector; for example, a dollar increase in local expenditures due to an expansion of its military installation. EIFS estimates its multipliers using a location quotient approach based on the concentration of industries within the region relative to the industrial concentrations for the nation.
The user inputs into the model the data elements which describe the Army action: the change in expenditures, or dollar volume of the construction project(s); change in civilian or military employment; average annual income of affected civilian or military employees; the percent of civilians expected to relocate due to the Army's action; and the percent of military living on-post. Once these are entered into the EIFS model, a projection of changes in the local economy is provided. These are projected changes in sales volume, income, employment, and population. These four indicator variables are used to measure

and evaluate socioeconomic impacts. Sales volume is the direct and indirect change in local business activity and sales (total retail and wholesale trade sales, total selected service receipts, and value-added by manufacturing). Employment is the total change in local employment due to the proposed action, including not only the direct and secondary changes in local employment, but also those personnel who are initially affected by the military action. Income is the total change in local wages and salaries due to the proposed action, which includes the sum of the direct and indirect wages and salaries, plus the income of the civilian and military personnel affected by the proposed action. Population is the increase or decrease in the local population as a result of the proposed action.

The UPH program at Fort Meade would require demolition of existing buildings and construction of the proposed UPH complex. The current working estimate for the cost of demolition and construction of these facilities (about $68,500,000) was divided over the projected 4-year initial development period (2012 – 2015) and entered as the change in expenditures (about $17,125,000 per year).

The Significance of Socioeconomic Impacts

Once model projections are obtained, the Rational Threshold Value (RTV) profile allows the user to evaluate the significance of the impacts. This analytical tool reviews the historical trends for the defined region and develops measures of local historical fluctuations in sales volume, income, employment, and population. These evaluations identify the positive and negative changes within which a project can affect the local economy without creating a significant impact. The greatest historical changes define the boundaries that provide a basis for comparing an action's impact on the historical fluctuation in a particular area. Specifically, EIFS sets the boundaries by multiplying the maximum historical deviation of the following variables:

		Increase	Decrease
Sales Volume	X	100%	75%
Income	X	100%	67%
Employment	X	100%	67%
Population	X	100%	50%

These boundaries determine the amount of change that will affect an area. The percentage allowances are arbitrary, but sensible. The maximum positive historical fluctuation is allowed with expansion because economic growth is beneficial. While cases of damaging economic growth have been cited, and although the zero-growth concept is being accepted by many local planning groups, military base reductions and closures generally are more injurious to local economics than are expansion.

The major strengths of the RTV are its specificity to the region under analysis and its basis on actual historical data for the region. The EIFS impact model, in combination with the RTV, has proven successful in addressing perceived socioeconomic impacts. The EIFS model and the RTV technique for measuring the intensity of impacts have been reviewed by economic experts and have been deemed theoretically sound.

The following are the EIFS input and output data for the proposed action and the RTV values for the ROI.

EIFS REPORT

PROJECT NAME

Fort Meade UPH EA

STUDY AREA

24003 Anne Arundel County, MD
24005 Baltimore County, MD
24027 Howard County, MD
24510 Baltimore City, MD

FORECAST INPUT

Change In Local Expenditures	$17,125,000
Change In Civilian Employment	0
Average Income of Affected Civilian	$0
Percent Expected to Relocate	0
Change In Military Employment	0
Average Income of Affected Military	$0
Percent of Military Living On-post	0

FORECAST OUTPUT

Employment Multiplier	4.55	
Income Multiplier	4.55	
Sales Volume – Direct	$17,125,000	
Sales Volume – Induced	$60,793,750	
Sales Volume – Total	$77,918,750	0.07%
Income – Direct	$3,319,704	
Income - Induced	$11,784,950	
Income – Total (place of work)	$15,104,650	0.03%
Employment – Direct	73	
Employment – Induced	259	
Employment – Total	332	0.03%
Local Population	0	
Local Off-base Population	0	0%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	11.54%	10.44%	2.75%	1.16%
Negative RTV	-4.82%	-4.53%	-3.28%	-0.46%

RTV DETAILED

SALES VOLUME

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	6424141	28073495	0	0	0
1970	6915489	28560970	487475	-163728	-0.57
1971	7403026	29315983	755013	103810	0.35
1972	8045231	30813234	1497251	846048	2.75
1973	8856483	31971903	1158669	507466	1.59
1974	9746284	31675423	-296480	-947683	-2.99
1975	10326483	30772920	-902503	-1553706	-5.05
1976	11299718	31865204	1092284	441081	1.38
1977	12321546	32528883	663679	12476	0.04
1978	13673009	33635603	1106720	455517	1.35
1979	15017482	33188636	-446967	-1098170	-3.31
1980	16390448	31797470	-1391166	-2042369	-6.42
1981	17908358	31518710	-278760	-929963	-2.95
1982	18673095	30997337	-521373	-1172576	-3.78
1983	20144721	32433001	1435664	784461	2.42
1984	22197396	34183989	1750988	1099785	3.22
1985	24081260	35881078	1697089	1045886	2.91
1986	25734801	37572810	1691733	1040530	2.77
1987	27877969	43210851	5638040	4986837	11.54
1988	30379843	41316587	-1894264	-2545467	-6.16
1989	32295547	41661254	344667	-306536	-0.74
1990	34208683	42076681	415426	-235777	-0.56
1991	34816734	41083744	-992936	-1644139	-4
1992	36057090	41105082	21338	-629865	-1.53
1993	37195852	41287396	182314	-468889	-1.14
1994	38614417	41703572	416176	-235027	-0.56
1995	40242771	42254908	551336	-99867	-0.24
1996	41486330	42316056	61148	-590055	-1.39
1997	43640507	43640507	1324451	673248	1.54
1998	45981574	45061943	1421436	770233	1.71
1999	49267308	47296615	2234671	1583468	3.35
2000	52593526	48911980	1615365	964162	1.97

INCOME

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	7575684	33105738	0	0	0
1970	8227806	33980840	875102	-123510	-0.36
1971	8949433	35439755	1458915	460303	1.3
1972	9819539	37608834	2169079	1170467	3.11
1973	10862106	39212202	1603368	604756	1.54
1974	12061015	39198299	-13903	-1012515	-2.58
1975	13016175	38788202	-410097	-1408709	-3.63
1976	14261925	40218628	1430426	431814	1.07
1977	15592190	41163383	944756	-53856	-0.13
1978	17324537	42618362	1454978	456366	1.07
1979	19194675	42420232	-198129	-1196741	-2.82
1980	21509128	41727710	-692523	-1691135	-4.05
1981	23690280	41694893	-32817	-1031429	-2.47
1982	25130241	41716199	21307	-977305	-2.34
1983	27015580	43495084	1778885	780273	1.79
1984	29775408	45854127	2359043	1360431	2.97
1985	32247965	48049468	2195341	1196729	2.49
1986	34421532	50255438	2205970	1207358	2.4
1987	36920469	57226725	6971287	5972675	10.44
1988	40101651	54538246	-2688479	-3687091	-6.76
1989	42806474	55220350	682104	-316508	-0.57
1990	45377830	55814732	594382	-404230	-0.72
1991	47039391	55506479	-308253	-1306865	-2.35
1992	48935735	55786737	280258	-718354	-1.29
1993	50343824	55881645	94908	-903704	-1.62
1994	52465375	56662607	780962	-217650	-0.38
1995	54601544	57331619	669011	-329601	-0.57
1996	56654475	57787563	455945	-542667	-0.94
1997	59836424	59836424	2048861	1050249	1.76
1998	63206823	61942688	2106264	1107652	1.79
1999	65930012	63292810	1350122	351510	0.56
2000	69958420	65061331	1768521	769909	1.18

EMPLOYMENT

Year	Value	Change	Deviation	%Deviation
1969	910738	0	0	0
1970	913121	2383	-11933	-1.31
1971	913755	634	-13682	-1.5
1972	929466	15711	1395	0.15
1973	956990	27524	13208	1.38
1974	970071	13081	-1235	-0.13
1975	952220	-17851	-32167	-3.38
1976	953208	988	-13328	-1.4
1977	978271	25063	10747	1.1
1978	1013245	34974	20658	2.04
1979	1043362	30117	15801	1.51
1980	1046000	2638	-11678	-1.12
1981	1053260	7260	-7056	-0.67
1982	1044031	-9229	-23545	-2.26
1983	1067027	22996	8680	0.81
1984	1103402	36375	22059	2
1985	1140541	37139	22823	2
1986	1167042	26501	12185	1.04
1987	1214738	47696	33380	2.75
1988	1245426	30688	16372	1.31
1989	1267271	21845	7529	0.59
1990	1274848	7577	-6739	-0.53
1991	1229079	-45769	-60085	-4.89
1992	1208943	-20136	-34452	-2.85
1993	1214935	5992	-8324	-0.69
1994	1234847	19912	5596	0.45
1995	1255133	20286	5970	0.48
1996	1265914	10781	-3535	-0.28
1997	1289225	23311	8995	0.7
1998	1307721	18496	4180	0.32
1999	1342028	34307	19991	1.49
2000	1368856	26828	12512	0.91

POPULATION

Year	Value	Change	Deviation	%Deviation
1969	1873882	0	0	0
1970	1890542	16660	8186	0.43
1971	1921325	30783	22309	1.16
1972	1934529	13204	4730	0.24
1973	1942715	8186	-288	-0.01
1974	1949297	6582	-1892	-0.1
1975	1949523	226	-8248	-0.42
1976	1945497	-4026	-12500	-0.64
1977	1950219	4722	-3752	-0.19
1978	1945229	-4990	-13464	-0.69
1979	1943631	-1598	-10072	-0.52
1980	1934456	-9175	-17649	-0.91
1981	1941483	7027	-1447	-0.07
1982	1944590	3107	-5367	-0.28
1983	1949083	4493	-3981	-0.2
1984	1959732	10649	2175	0.11
1985	1966093	6361	-2113	-0.11
1986	1986757	20664	12190	0.61
1987	1999860	13103	4629	0.23
1988	2019992	20132	11658	0.58
1989	2030097	10105	1631	0.08
1990	2048658	18561	10087	0.49
1991	2067825	19167	10693	0.52
1992	2081380	13555	5081	0.24
1993	2094729	13349	4875	0.23
1994	2103972	9243	769	0.04
1995	2111205	7233	-1241	-0.06
1996	2114490	3285	-5189	-0.25
1997	2119127	4637	-3837	-0.18
1998	2125724	6597	-1877	-0.09
1999	2134673	8949	475	0.02
2000	2145050	10377	1903	0.09

****** End of Report ******

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APPENDIX D

Solid Waste Calculations

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Table D-1.
Fort Meade UPH Construction and Demolition Non-hazardous Solid Waste Calculations—Preferred Alternative

Building number	Action	Building square footage	Demolition debris-lb/sq ft	Construction debris-lb/sq ft	Total demolition debris (lbs)	Total construction debris (lbs)
4703	Demolish	14,706	115		1,691,190	
4704	Demolish	14,432	115		1,659,680	
4705	Demolish	29,458	115		3,387,670	
4707	Demolish	29,429	115		3,384,335	
4709	Demolish	29,429	115		3,384,335	
4717	Demolish	12,950	115		1,489,250	
4720	Demolish	12,950	115		1,489,250	
4721	Demolish	13,464	115		1,548,360	
N/A	Construct 18 buildings	796,560		4.4		3,504,864
				Total pounds:	18,034,070	3,504,864
				Total tons:	9,017	1,752
				Recycled tons:	4,509	876
				Disposed tons:	4,509	876

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