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**Draft Environmental Assessment  
Installation Information Infrastructure Modernization  
Program at Fort Meade  
Anne Arundel County, Maryland**

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**May 2013**

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## EXECUTIVE SUMMARY

An Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] Parts 1500 – 1508), and 32 CFR Part 651 (*Environmental Analysis of Army Actions*) to evaluate the potential impacts of the proposed Installation Information Infrastructure Modernization Program (I3MP) cable infrastructure upgrades at Fort George G. Meade (FGGM) in Anne Arundel County, Maryland. The I3MP upgrades would facilitate the transition to Voice Over Internet Protocol (VOIP) capabilities and are necessary to allow Fort Meade to optimize connectivity with other installations and deployed combat forces.

The Proposed Action consists of upgrades and modernization of the voice network, Assured Services Local Area Network (ASLAN), data core, and outside and inside plant as part of the I3MP program effort to upgrade the information technology infrastructure. Selection of the I3MP segment routes were made in consultation with the Fort Meade Department of Public Works Environmental Division (DPW-ED) in an attempt to avoid environmental impacts and sensitive areas, while trying to achieve the most cost effective route. Trenching would be the default method of conduit and cable installation. Directional boring or cable plow methods would be employed where needed to minimize impacts and allow for more efficient cable installation.

Installation of the cable upgrades would require placement of approximately 4.45 miles of underground conduits containing the cable, 31 manholes, and three handholes. The upgraded cable would be run into receiving buildings through a below-ground coring to wall mounted cabinets installed in basement utility closets or laundry rooms, as applicable. A total of 4.75 acres of ground would be disturbed during installation, but would be restored to pre-construction conditions and vegetated with native seed mix. Trees would be replaced in accordance with the FGGM Forest Conservation Act and Tree Management Policy.

The Proposed Action is not expected to affect geology, groundwater, wildlife, utilities, archeological resources, environmental justice, or protection of children from environmental health risks and safety risks. Rare, threatened, or endangered species are not present on Fort Meade and therefore would not be affected by the Proposed Action. Temporary beneficial socioeconomic impacts may occur from construction employees patronizing local businesses during installation of the cable upgrades. There would be no adverse effects to any National Register of Historic Places (NRHP) eligible resources as a result of the Proposed Action. Installing the buried cable is expected to produce short-term adverse impacts to land use, visual resources, soils, air quality, noise, surface water, floodplains, stormwater management, the coastal zone, forested areas, and landscape trees. However, an Erosion and Sediment Control Plan (ESCP), Stormwater Management Plan (SWMP) waiver, and existing FGGM management plans, such as the FGGM Forest Conservation Act and Tree Management Policy, would be applied to minimize and mitigate any impacts. No permanent adverse impacts are expected to result from the Proposed Action.

Required permits may include a Directorate of Public Works form (Dig Permit), a Maryland Department of Transportation Utility Permit for directional drilling under Maryland Route 32, a Maryland Nontidal Wetlands and Waterways permit for temporary disturbance of floodplains, an ESCP, and a SWMP waiver. Prior to the start of construction, all required permits or approvals would be obtained.

No I3MP cable upgrades would occur if the No Action Alternative were implemented. There would be no alteration to the existing conditions. However, the No Action Alternative would likely result in deteriorating communications, disabling FGGM from maintaining its ability to communicate with deployed personnel and other installations.

Table ES-1 summarizes the compliance status of the Proposed Action with all applicable laws and regulations. Table ES-2 summarizes the potential environmental impacts of the Proposed Action and the No Action Alternative.

Analysis of the environmental impacts of the Proposed Action indicates that there would be no significant adverse impacts.

**Table ES-1. Compliance with Federal Environmental Statutes and Executive Orders**

<b>Statutes</b>	<b>Compliance</b>
Clean Air Act, as amended (Public Law 88-206)	Full
Clean Water Act, as amended (Public Law 95-217)	Full
Coastal Zone Management Act (Public Law 92-583)	Full
Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C. §9601 et seq.)	Full
Fish and Wildlife Coordination Act, as amended (16 United States Code [U.S.C.] 661, et seq.)	Full
Migratory Bird Treaty Act	Full
National Environmental Policy Act of 1969 (Public Law 91-190)	Full
National Historic Preservation Act of 1966, as amended (Public Law 89-665)	Full
Noise Control Act of 1972, as amended (Public Law 92-574)	Full
Resource Conservation and Recovery Act (Public Law 94-580)	Full
Safe Drinking Water Act, as amended (Public Law 93-523)	Full
Solid Waste Disposal Act of 1965, as amended (Public Law 89-272, Title II)	Full
Toxic Substances Control Act of 1976 (Public Law 94-469)	Full
Watershed Protection and Flood Prevention Act of 1954 (16 U.S.C. §1101, et seq.)	Full
Wetlands Conservation Act (Public Law 101-233)	Full
Sikes Act	Full
Archaeological Resources Protection Act	Full
<b>Executive Orders (EO)</b>	<b>Compliance</b>
Floodplain Management (EO 11988)	Full
Protection of Wetlands (EO 11990)	Full
Environmental Justice in Minority Populations and Low-Income Populations (EO 12898)	Full
Federal Compliance with Pollution Control Standards (EO 12088)	Full
Protection of Children from Environmental Health Risks and Safety Risks (EO 13045)	Full
Strengthening Federal Environmental, Energy, and Transportation Management (EO 13514)	Full

Note: Full = Coordination for resources related to this Act or EO is complete (see Appendix A).

**Table ES-2. Summary of Effects of the Proposed Action and the No Action Alternative**

Resource	Proposed Action	No Action
Land Use	Potential for temporary adverse impacts to land use during installation. No long-term change in land use patterns.	No impacts
Visual and Aesthetic Value	Installation of cable would be underground; therefore, only temporary adverse impacts would occur during installation.	No impacts
Geology and Soils	Potential for temporary adverse impacts to soils would be managed through implementation of best management practices (BMPs), an ESCP, SWMP waiver, and FGGM's Stormwater Pollution Prevention Plan (SWPPP).	No impacts
Air Quality	Potential for short-term adverse impacts from equipment emissions during installation. Calculations indicate impacts would be below <i>de minimis</i> levels and not significant. See the Record of Non-Applicability (RONA) in Appendix B.	No impacts
Noise	Short-term adverse impacts would be minimal or negligible due to intermittent, transitory, and limited operation characteristics.	No impacts
Water Resources	No impacts to groundwater. Potential short-term adverse impacts to surface water or stormwater from installation would be managed through BMPs, ESCP, SWMP waiver, and FGGM's SWPPP.	No impacts
Floodplains	Installation would primarily be underground or in paved areas. Short-term adverse impacts would be managed through BMPs, an ESCP, SWMP waiver, FGGM's SWPPP, and Maryland's Federal/State Application for the Alteration of any Floodplain, Waterway, Tidal, or Nontidal Wetland permitting process.	No impacts
Wetlands	No impacts expected, as the Proposed Action was designed to avoid wetland impacts.	No impacts
Coastal Zone Management	A federal consistency determination (Appendix C) has been completed and the analysis shows that impacts to wetlands are being avoided and impacts to floodplains and forested areas are being minimized and these areas preserved to the maximum extent possible. Therefore, the Proposed Action would be consistent to the maximum extent practicable with the enforceable policies of the Maryland Coastal Zone Management Program and would not result in significant adverse impacts to Maryland's coastal zone and natural resources.	No impacts
Biological Resources	Potential for short-term disturbance of wildlife due to installation activities. Adverse impacts to landscape trees and forested areas would be mitigated in accordance with FGGM's Forest Conservation Act and Tree Management Policy.	No impacts
Cultural Resources	No permanent adverse effects to NRHP-eligible resources expected. The cable would be installed underground. New cable and utility boxes placed into documented architectural resources using methods to avoid adverse impact.	No impacts

**Table ES-2. Summary of Effects of the Proposed Action and the No Action Alternative**

Resource	Proposed Action	No Action
Hazardous and Toxic Substances	The Proposed Action may potentially disturb areas containing hazardous or toxic substances (Installation Restoration Program [IRP] sites). Potential impacts would be minimized and prevented through the dig permit process and ensuring all work activities are designed, planned, and executed in accordance with IRP and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requirements, including but not limited to established land use, administrative, and engineering controls and to ensure that existing contamination is not transported to other areas or other environmental media.	No impacts
Utilities	The Proposed Action would improve connectivity for Installation communication. No impact expected as the dig permit process and coordination with Miss Utility would minimize chances of underground strikes and service interruptions during installation.	Communications and connectivity would continue to deteriorate, and disabling FGGM from maintaining its ability to communicate with deployed personnel and other installations.
Solid Waste and Recyclable Management	Non-hazardous solid waste generated would be removed by a private contractor, and the installation contractor would comply with FGGM recycling policies, to the extent possible.	No impacts
Transportation	Temporary adverse impacts to traffic within FGGM and Maryland Route 32 associated with installing cable in or along roadways. A State Highway Administration (SHA) Utility Permit would be obtained to minimize and mitigate impacts to Maryland Route 32.	No impacts
Socioeconomics, Environmental Justice, and Protection of Children from Environmental Health Risks and Safety Risks	No impacts are expected to any demographic group or children.	No impacts
Cumulative Effects	No permanent adverse cumulative impacts expected. During construction, there is the potential for minor temporary adverse impacts to land use, air quality, and noise. Temporary adverse impacts from the Proposed Action to soils, floodplains, stormwater, coastal zone, forested areas, hazardous and toxic substances, utilities, and transportation expected to be managed through established management plans, BMPs, and permitting processes.	No impacts

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## ACRONYMS AND ABBREVIATIONS

AAFES	Army and Air Force Exchange Services	HH	Handhole
ACHP	Advisory Council on Historic Preservation	HPA	Habitat Protection Area
ACM	asbestos-containing materials	HSWA	Hazardous and Solid Waste Amendments
ASLAN	Assured Services Local Area Network	I3MP	Installation Information Infrastructure Modernization Program
AOI	area of interest	ICE	InterCounty Excavation, Inc.
APE	area of potential effects	IRP	Installation Restoration Program
AQCR	Air Quality Control Region	kV	kilovolt
AWG	Asymmetric Warfare Group	LAN	local area network
BGE	Baltimore Gas and Electric	LBP	lead-based paint
BMP	best management practice	LOC	Library of Congress
CAAA	Clean Air Act and Amendments	MBTA	Migratory Bird Treaty Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	MC	munitions constituents
CEQ	Council on Environmental Quality	MDE	Maryland Department of the Environment
CFR	Code of Federal Regulations	MDNR	Maryland Department of Natural Resources
CH <sub>4</sub>	methane	MDOP	Maryland Office of Planning
CSL	Closed Sanitary Landfill	MGD	million gallons per day
CO	carbon monoxide	MH	manhole
CO <sub>2</sub>	carbon dioxide	MHT	Maryland Historic Trust
CO <sub>2</sub> e	CO <sub>2</sub> equivalent	MMPR	Military Munitions Response Program
COMAR	Code of Maryland Regulations	MP	motor pool
CRM	Cultural Resource Manager	N <sub>2</sub> O	nitrous oxide
CWA	Clean Water Act	N/A	not applicable
CY	cubic yards	NAAQS	National Ambient Air Quality Standards
dB	decibel(s)	NEPA	National Environmental Policy Act
dba	A-weighted decibel	NHPA	National Historic Preservation Act
DERP	Defense Environmental Restoration Program	NIPRNet	Non-classified Internet Protocol Router Network
DINFOS	Defense Information School	NO <sub>2</sub>	nitrogen dioxide
DMM	discarded military munitions	NO <sub>x</sub>	nitrogen oxides
DNL	day-night average sound level	NOAA	National Oceanic and Atmospheric Administration
DoD	Department of Defense	NPL	National Priorities List
DPW	Department of Public Works	NRCS	Natural Resources Conservation Service
DPW-ED	DPW – Environmental Division	NRHP	National Register of Historic Places
DRMO	Defense Reutilization and Marketing Office	NSA	National Security Agency
EA	Environmental Assessment	NSR	New Source Review
EIS	Environmental Impact Statement	NWPA	Nontidal Wetlands Protection Act
EMS	Environmental Management System	O <sub>3</sub>	ozone
EO	Executive Order	OSP	Outside Plant
ESA	Endangered Species Act	OU	Operable Unit
ESCP	Erosion and Sediment Control Plan	PAHs	polycyclic aromatic hydrocarbons
FCA	Forest Conservation Act	PA/SI	Preliminary Assessment/Site Inspection
FEMA	Federal Emergency Management Agency	Pb	lead
FGGM	Fort George G. Meade	PCB	polychlorinated biphenyl
FNSI	Finding of No Significant Impact	PCE	perchloroethylene
ft	foot/feet	PIF	Partners in Flight
ft <sup>2</sup>	square foot/feet	PM	particulate matter
GHG	greenhouse gas	PM <sub>2.5</sub>	particulate matter with diameter of 2.5 microns or less in diameter
GOQ	General Officers Quarters		
GWP	global warming potential		
HAP	hazardous air pollutant		
HDPE	High-density Polyethylene		

PM <sub>10</sub>	particulate matter with diameter less than 10 microns but greater than 2.5 microns	TCE	Trichloroethene
PMO	Project Management Office	TMP	Transportation Motor Pool
POW	prisoner of war	TPH-DRO	total petroleum hydrocarbon - diesel range organics
PVC	Polyvinyl chloride	TPH- GRO	total petroleum hydrocarbon -gasoline range organics
RCRA	Resource Conservation and Recovery Act	TPY	tons per year
REC	Record of Environmental Consideration	TSCA	Toxic Substances Control Act
RI	remedial investigation	TSDF	Treatment, Storage, and Disposal Facility
ROI	region of influence	US	United States
SHA	State Highway Administration	USACE	US Army Corps of Engineers
SHPO	State Historic Preservation Officer	USAEC	US Army Environmental Center
SIP	State Implementation Plan	USDA	US Department of Agriculture
SMP	Site Management Plan	USEPA	US Environmental Protection Agency
SO <sub>2</sub>	sulfur dioxide	USFWS	US Fish and Wildlife Service
SPCC	Spill Prevention, Control, and Countermeasure	UXO	unexploded ordnance
SVOC	semi-volatile organic compound	VOC	volatile organic compound
SWMP	Stormwater Management Plan	VOIP	Voice Over Internet Protocol
SWMU	Solid Waste Management Unit	WTP	water treatment plant
SWPPP	Stormwater Pollution Prevention Plan	WWTP	wastewater treatment plant
TBD	to be determined		

## **1.0 INTRODUCTION**

### **1.1 Introduction**

The Army is proposing to upgrade and modernize the voice network, Assured Services Local Area Network (ASLAN), data core, and outside and inside plant upgrades at Fort George G. Meade (FGGM or Fort Meade), Maryland. The Installation Information Infrastructure Modernization Program (I3MP) Project Management Office (PMO) located at Fort Belvoir, Virginia is managing the proposed upgrades and modernization. Upgrades of the information technology infrastructure are required to transition to a modern unified communications platform and would prepare the information technology infrastructure to implement Voice Over Internet Protocol (VOIP) capabilities to I3MP supported facilities located on Fort Meade. The outside plant (OSP) upgrade component of this project requires the installation of underground conduit, fiber optic cables, and vaults (manholes and handholes) requiring excavation activities as part of the VOIP upgrade requirement.

### **1.2 Background**

Fort Meade is a 5,139 acre United States (US) Army Installation located in Anne Arundel County, Maryland approximately 12 miles southwest of Baltimore City, Maryland. FGGM's primary mission is to provide a wide range of services to more than 95 partner organizations affiliated with the US Army, US Navy, US Air Force, US Marine Corps, US Coast Guard, National Security Agency (NSA), Defense Media Activity, Defense Information Systems Agency, the Defense Courier Service, and the US Cyber Command (FGGM 2012a).

In May 2010, the Department of Defense (DoD) Information Enterprise Strategic Plan 2010-2012 was released. This strategic plan requires DoD wired and wireless transmission capability be sufficiently sized, reliable, available, and flexible to accommodate DoD's mission needs (DoD 2010). The telecommunications technology roadmap is rapidly evolving to provide unified communications over data networks by implementing a data network VOIP communication platform to replace legacy switched communication systems. As the current legacy switched voice communication system at Fort Meade is nearing the end of its lifecycle, a more robust interoperable infrastructure would provide connectivity and computing capabilities and allow FGGM and mission partners to access, share, and act on the information needed to accomplish their missions.

A limited upgrade effort was completed at Fort Meade in 2010, and associated existing support infrastructure was subsequently modernized sufficiently.

### **1.3 Purpose and Need of the Proposed Action**

The purpose of the Proposed Action is to provide the outside plant infrastructure, which would allow the fiber optic architecture to support robust network reliability and enable the throughput that unified capabilities requires. Network unified capabilities enables strategic, tactical, classified, and multinational missions with a broad range of interoperable and secure capabilities for converged non-assured and assured voice, video, and data services from the end device, through Local Area Networks (LANs), and across the backbone networks. The addition of the OSP infrastructure provides this capability by deploying the fiber optic connectivity in a mass network with multiple paths.

The need for the Proposed Action is to allow Fort Meade to be able to communicate via voice, data, and video files within the Installation, to deployed combat forces, and to other active Continental United States activities. Without the capacity improvements and modernization, FGGM would not have the robust capacity required to achieve the Enterprise Strategic Plan goals.

#### 1.4 Scope of the Environmental Assessment

This Environmental Assessment (EA) was prepared in accordance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] Parts 1500 – 1508), and 32 CFR Part 651 (*Environmental Analysis of Army Actions*) to assess the environmental consequences of the proposed I3MP infrastructure upgrades at Fort Meade.

This EA identifies and evaluates the potential environmental effects of the Proposed Action and alternatives at Fort Meade. Potential environmental effects include those associated with the installation and operation of the infrastructure upgrades. The EA focuses on impacts likely to occur within the areas of potential effect. The document analyzes direct effects, defined as effects resulting from the alternatives and occurring at the same time and place, and indirect effects, which are effects that are distant or occurring in the future. The potential for cumulative impacts, as defined by 40 CFR 1508.7, are also addressed. Relevant statutes, their implementing state and federal regulations, and Executive Orders (EOs) establish standards and provide guidance on environmental management and planning to Fort Meade when addressing environmental considerations.

#### 1.5 Public Involvement

Fort Meade initiated coordination with federal and state agencies for the Proposed Action in January 2013. Agencies receiving coordination letters included: the US Fish and Wildlife Service (USFWS), the US Environmental Protection Agency (USEPA), the Maryland Department of Natural Resources (MDNR), the Maryland Department of the Environment (MDE), the Maryland Office of Planning (MDOP), and the Maryland Historic Trust (MHT). Appendix A contains copies of the coordination letters and agency responses.

As per 32 CFR Part 651, opportunities for public participation in the development of this EA and decisions regarding the Proposed Action are being provided. The draft EA and any following draft Finding of No Significant Impact (FNSI) will be made available to the public for 30 days. The public may submit comments on the Proposed Action and documentation during the 30-day review period for consideration by the Army. After considering any comments submitted during the 30-day review period, the Army may then execute the FNSI and implement the Proposed Action if it is determined there are no significant adverse impacts. If the Army determines that significant impacts would result from the Proposed Action, the Army would prepare an environmental impact statement (EIS). If it is determined that an EIS is necessary, a notice will be published in the *Federal Register* advising of the intent to prepare the EIS, commit to mitigate impacts below significant levels, or not proceed with the Proposed Action.

## 2.0 PROPOSED ACTION

The Proposed Action is to install a total of 4.45 miles of underground fiber optic cable conduit, 31 manholes, and three handholes as part of the VOIP upgrade project. The project is located within the boundaries of Fort Meade. Installation of the OSP cable would be accomplished by combining trenching, direct burying, and directional boring methods to bury 4-inch polyvinyl chloride (PVC) conduits containing the groups of one, two, four or six stacked cables. The OSP cable would be placed in or adjacent to roadways and other developed areas whenever possible. Table 2.0-1 and Figures 2.0-1 through 2.0-4 describe the conduit type, layout, and excavation method for the cable installation.

InterCounty Excavation, Inc. (ICE) designed and sized the conduit system in accordance with the Information Systems in Engineering and Construction's Outside Plant Design Requirement Specifications. Conduits would be bundled in groups of one, two, four, six or twelve in accordance with the industry standards. Industry refers to this as a conduit bank. Fiber optic and copper telecommunication cables would be placed in conduits within the concrete encased conduit bank system.

Trenching would be the primary method of installation. Open trenching is the only construction method available to place the concrete encased conduit system. Trenching includes excavating up to a 3 foot (ft) deep and 1.5 ft wide trench in which the groups of one, two, four, or six cables are stacked (labeled as 1PVC4, 2PVC4, 4PVC4, or 6PVC4, respectively). When trenching through paved areas, the disturbed area standard width is 2 ft, which includes both the cut trench and extra width of asphalt removal to prepare the street for repair. The typical disturbed area width of trenching through grassy or other unpaved areas is 10 ft to account for disturbance of adjacent vegetated areas by equipment, which would require revegetation. Approximately 19,761 ft of trenching is proposed (Table 2.0-2). A small portion of the cable, up to 789 ft (Table 2.0-2), may be installed using cable plow methods. Cable plowing uses a cable plow machine to create a trench and lay the cable.

Directional drilling, also called boring, allows the cable to be installed under an obstruction or natural resource such as a stream without disturbing the ground surface. This method would be used if a street or stream should not be disturbed by trenching. Directional drilling would be used for this project to install the OSP under major streets, such as Maryland Route 32 and stream corridors on Simonds Street and York Avenue. Areas where directional drilling would be used are detailed on Table 2.0-1 and Figures 2.0-1 through 2.0-4. The drilling would be conducted by installing access pits at the beginning and end of the directional drilling area. The access pits are 12 ft by 12 ft and provide access for drilling and attachment to the cable route. Approximately 2,971 ft of directional drilling, requiring 31 access pits, is proposed.

Bentonite (clay) slurry would be used as a drilling fluid to help facilitate directional boring. The proposed bentonite slurry disposal area would be located at an existing permitted MDE stockpile area currently used for other Fort Meade projects (Figure 2.0-1). The permit for this stockpile location is under renewal, and the Proposed Action assumes that a valid permit would be in place at the time for project implementation. Disposing of spent bentonite involves placing the used slurry in a dewatering area, which is a shallow pit protected on four sides by an earthen berm, and allowed to dry. The dry clay would then be removed and placed on the excess fill pile adjacent to the pit. Upon final completion of the project, the berms would be leveled and the pit restored and stabilized to pre-construction conditions. The spent bentonite placement method and location has been coordinated with and approved by FGGM Department of Public Works (DPW) (FGGM 2013a).

A total of 31 new manholes and three handholes would be installed at intervals/ junction points along the OSP route to provide access for repairs and maintenance. The dimensions for manhole installation would typically be 7 ft deep and 8 ft wide by 14 ft long, or 112 square feet (ft<sup>2</sup>). The area of disturbance for handhole installation would typically be 7 ft deep and 6 ft wide by 6 ft long, or 36 ft<sup>2</sup>.

The Proposed Action includes coring through buildings to run the fiber-optic cable into them. The coring process would involve drilling a 4.5-inch diameter hole below ground, through the basement wall of each building to provide an entrance for the conduit. The cables would connect to a 2-ft wide and 2-ft tall cabinet mounted to an interior wall in the basement of each building. The wall-mounted cabinets would be installed in basement utility closets or, in the case of housing, in basement laundry rooms.

Table 2.0-2 provides a summary of the area of disturbance from the installation of the utility upgrades, including but not limited to total area disturbed by the total number of manholes, handholes, and linear feet of trenching, respectively. The project would not create any additional non-pervious structures or surfaces. Ground surface would be restored to its current grade and disturbed vegetated areas would be seeded and stabilized according to approved best management practices (BMPs), a MDE approved Erosion and Sediment Control Plan (ESCP), a Stormwater Management Plan (SWMP) waiver, and FGGM's Stormwater Pollution Prevention Plan (SWPPP). An existing parking lot would be used as the equipment staging area. Clean soil from the excavation would be used as backfill to bury the cable, around vaults and manholes, and other excavated areas. Excess clean fill would be disposed of at the same stockpile location as the spent bentonite drilling fluid, as depicted in Figure 2.0-1, and approved by FGGM DPW (FGGM 2013a).

**Table 2.0-1. Proposed I3MP Cable Layout (Please refer to Figures 2.0-1 through 2.0-4 for Segment locations)**

SEGMENT	DESCRIPTION	CORRIDOR WIDTH (feet)	LENGTH* (feet)
A	Trench 2 each, 4-inch concrete encased PVC conduits from existing manhole (MH)-unknown to serve Building 2018. Remove and replace asphalt as needed.	2	33
	Trench 4 each, 4-inch concrete encased PVC conduits between existing MH-308 to existing MH-unknown.	2	152
	Trench 4 each, 4-inch concrete encased PVC conduits between existing MH-306 to existing MH-unknown to the south. Remove and replace 400 ft <sup>2</sup> of asphalt.	2	240
	Trench 4 each, 4-inch concrete encased PVC conduits between existing MH-unknown to existing MH-307 then to Building 1978. Remove and replace asphalt as needed.	2	397
	Direct bury fiber optic cable from existing MH-307 behind Building 1978, placed within the perimeter fence to Building 1975 by combination of cable plow and directional boring methods.	1	789
B	Trench 2 each, 4-inch concrete encased PVC conduits from existing MH-346 to serve Building 2793.	2	182
C	Directional bore in a southwesterly direction under road from existing MH-348 to the south side of the road.	10	89*
	Excavate Pit south side of Mapes road; tie in 4-inch high-density polyethylene (HDPE) pipes to 2 each, 4-inch concrete encased PVC conduits, then trench conduits to new manhole (MH-I3MP-20). Trench from MH-I3MP-20 east (laterally) to Building 2600 and southward.	10	971
	Trench 2 each, 4-inch concrete encased PVC conduits from new MH-I3MP-20 to Building 2600.	10	586
D	Trench 1 each, 4-inch concrete encased PVC conduit from existing handhole (HH)-124B1 to existing HH-unknown. Cut and replace asphalt as needed.	3	195
	Trench 2 each, 4-inch concrete encased PVC conduits from new HH-unknown to Building 6600. Remove and replace asphalt as needed.	10	157
	Trench 1 each, 4-inch concrete encased PVC conduit from existing HH-unknown to existing Building 6617. Cut and replace concrete as needed.	5	673
	Trench 4 each, 4-inch concrete encased PVC conduits from existing HH-unknown to new MH-I3MP-19, existing MH-122, existing MH-121, and existing MH-120. Remove and replace asphalt as needed.	3	1335
	Directional bore under stream where it crosses Simonds Street and again under stream where it crosses York Avenue. 150 ft 4 each, 4-inch HDPE Pipe and Join underground to concrete encased 4 each, 4-Way 4-inch PVC conduit	10	200*
E	Trench 2 each, 2-way concrete encased 4-inch PVC conduits from existing MH-217 to Building 4674	10	176
F	Directional Bore 1 each, 1-inch HDPE pipe from existing MH-197 to General Officers Quarters (GOQ) house number 4549.	10	156*
G	Directional Bore from existing MH-197A to existing MH-27 and install 4 each. 4-inch HDPE pipes and 1 each, 4-inch HDPE pipe to GOQ house number 4547.	10	386*
	Directional Bore from existing MH-27 to GOQ houses, 4546, 4536, 4526, 4535, 4534 and 4544. Install 1 each, 4-inch HDPE pipe to each GOQ.	14	685*

**Table 2.0-1. Proposed I3MP Cable Layout (Please refer to Figures 2.0-1 through 2.0-4 for Segment locations)**

SEGMENT	DESCRIPTION	CORRIDOR WIDTH (feet)	LENGTH* (feet)
H	Trench and install 12 each, 4-inch concrete encased conduits from existing MH-1 across Llewellyn Avenue to Building 4407. Cut, remove, and replace asphalt as needed.	6	98
I	Trench and install 6 each, 4-inch concrete encased PVC pipes under Ernie Pyle Street from existing MH-8-1 to new MH-I3MP-17, then to new MH-I3MP-18. Both MH-I3MP-17 and MH-I3MP-18 measure 12 ft long by 6 ft wide by 7 ft high. Excavate manhole pit, cut, remove, and replace asphalt as needed to place conduit bank under the street.	5	818
J	Trench and install 2 each, 4-inch concrete encased PVC pipes from existing MH-309 to Building 393. Cut, remove and replace asphalt as needed.	2.5	64
K	Directional bore Sixth Army Cavalry Street from existing MH-133-1 to New MH-I3MP-to be determined (TBD) in front of Building 8612 and install 4 each, 4-HDPE pipes. Excavate Pit for new precast concrete manhole that measures 12 ft long by 6 ft wide by 7 ft high.	14	72*
	Trench 4 each, 4-inch concrete encased PVC conduits from. Excavate Pit and set new precast concrete manhole that measures 12 ft long by 6 ft wide by 7 ft high.	10	408
	Trench 4 each, 4-inch concrete encased PVC conduits from new MH-I3MP-TBD in front of Building 8608, and from new MH-I3MP-TBD in front of Building 8612 to new MH-I3MP-TBD south to new MH-I3MP-TBDs at Buildings 8609, 8544, to existing MH-129A, existing MH-134-1, and under Simonds Street to MH139-1 in front of Building 8549. Excavate Pits and set 3 new precast concrete manholes that measure 12 ft long by 6 ft wide by 7 ft high. Remove and replace asphalt as needed.	10	2234
	Directional bore and install 2 each, 4-inch HDPE pipes under Army Cavalry Street from new MH- I3MP-TBD in front of Building 8609 to new precast concrete manhole, measuring 12 ft long by 6 ft wide by 7 ft high, to existing MH-131.	14	63*
	From MH-131, tie into 2 each, 4-inch HDPE pipes to 2 each, 2-inch concrete encased conduits and trench to Building 8605. Remove and replace concrete sidewalks.	10	170
	Directional Bore from new MH in front of 8544 under Sixth Army Cavalry street and install 2 each, 4-inch HDPE pipes, excavate pit to tie into PVC conduits.	11	63*
	Trench 4 each, 4-inch PVC concrete encased conduits to new HH-I3MP-TBD located between Buildings 8605 and 8543. Remove and replace concrete sidewalk as needed.	11	165
	Trench and install 2 each- 2-inch concrete encased PVC conduits to Buildings 8605 and 8543 from new HH-I3MP-TBD.	10	152
Trench and install 2 each, 2-inch concrete encased PVC conduits from existing MH-128A to Building 8465.	10	387	

**Table 2.0-1. Proposed I3MP Cable Layout (Please refer to Figures 2.0-1 through 2.0-4 for Segment locations)**

SEGMENT	DESCRIPTION	CORRIDOR WIDTH (feet)	LENGTH* (feet)
L	Directional bore and install 2 each, 4-inch HDPE pipes under Llewellyn Street from existing MH-6C to new precast concrete manhole measuring 12 ft long by 6 ft wide by 7 ft high, MH-I3MP-6. Excavate and install new precast concrete manhole.	14	88*
	Trench and install 4 each, 4-inch concrete encased PVC pipes from new MH-I3MP-6 to new MH-I3MP-7, then to new MH-I3MP-8, down to MH-I3MP-11. Cut, remove, and replace asphalt street/parking area as needed to install the six new manholes and conduits.	4	1487
	Trench and install 2 each, 4-inch concrete encased PVC pipes from existing MH-94A to Building 4431. Cut, remove, and replace asphalt as needed.	3	161
	Trench and install 2 each, 4-inch concrete encased PVC pipes from existing MH-99 to Building 4463. Cut, remove, and replace asphalt as needed.	4	36
	Directional bore and install 1 each, 4-inch HDPE pipe from MH-I3MP-11 to Building 4302.	10	116*
	Directional bore and install 1 each, 4-inch HDPE pipe from MH-I3MP-10 to Building 4303.	10	174*
	Directional bore and install 1 each, 4-inch HDPE pipe from MH-I3MP-10 to Building 4304.	10	152*
	Directional bore and install 1 each, 4-inch HDPE pipe from MH-I3MP-9 to Building 4305.	10	165*
	Directional bore and install 1 each, 4-inch HDPE pipe from MH-I3MP-9 to Building 4306.	10	112*
M	Trench and install 6 each, 4-inch concrete encased PVC pipes under Chamberlin Avenue from existing MH-311 to new MH-I3MP-1, measuring 12 ft long by 6 ft wide by 7 ft high, then to new MH-I3MP-2, measuring 12 ft long by 6 ft wide by 7 ft high. Excavate manhole pit (s) (2). Cut, remove, and replace asphalt as needed to place conduit bank under the street.	3	745
	Trench and install 2 each, 4-inch concrete encased PVC pipes from new manhole, MH-I3MP-2, to Building 294. Cut, remove, and replace asphalt as needed.	2.5	153
	Trench and install 6 each, 4-inch concrete encased PVC pipes under 4th Street from new MH-I3MP-2 to new MH-I3MP-3, measuring 12 ft long by 6 ft wide by 7 ft high, then to new MH-I3MP-4, measuring 12 ft long by 6 ft wide by 7 ft high. Excavate manhole pit(s) (2). Cut, remove, and replace asphalt as needed to place conduit bank under the street.	3	725
	Trench and install 4 each, 4-inch concrete encased PVC pipes from new MH-I3MP-4 to existing manhole, MH-53. Cut, remove, and replace asphalt as needed to place conduit bank under the street.	3	156
N	Trench and install 4 each, 4-inch concrete encased PVC pipes under the existing sidewalk from existing MH-60 to new MH-I3MP-5, measuring 12 ft long by 6 ft wide by 7 ft high. Excavate manhole pit. Cut, remove, and replace asphalt as needed to cross Wilson Street.	3.5	388
	Trench and install 2 each, 4-inch concrete encased PVC pipes from new MH-I3MP-5 to new I3MP Handhole behind Building 2300, measuring 4 ft long by 4 ft wide by 4 ft high, then to Building 2300. Excavate and install precast concrete handhole.	6	282

**Table 2.0-1. Proposed I3MP Cable Layout (Please refer to Figures 2.0-1 through 2.0-4 for Segment locations)**

SEGMENT	DESCRIPTION	CORRIDOR WIDTH (feet)	LENGTH* (feet)
O	Trench and install 2 each, 2-inch concrete encased PVC conduits from existing MH-400 to Building 6330. Cut, remove, and replace asphalt to cross Dust and Taylor Streets.	10	448
P	Trench and install 6 each, 4-inch concrete encased PVC pipes from existing manhole, MH-313B, to new manhole, MH-I3MP at the corner of Pepper Road and 1st Street (placed adjacent to the roadway in grassy area), then along First Street to Building 2250, and extending beyond intersection of Huber Road and Rock Avenue. Excavate and install five new precast manholes, measuring 12 ft long by 6 ft wide by 7 ft high, and one handhole.	10	1993
	Trench and install 2 each, 4-inch concrete encased PVC pipes from new manhole, MH-I3MP, to new manhole, MH-I3MP in front of Building 2247A. Place adjacent to the roadway/ Excavate and install new precast manhole, measuring 2 ft long by 6 ft wide by 7 ft high. Cut, remove, and replace asphalt as needed.	10	73
	Trench and install 2 each, 4-inch concrete encased PVC pipes from new precast concrete handhole, HH-I3MP, measuring 4 ft long by 4 ft wide by 4 ft high, to Building 2250. Cut, remove, and replace asphalt and concrete surfaces as needed.	3	215
Q	Directional bore 4 each, 4-inch HDPE pipes under Maryland Route 32. Excavate entrance and exit bore pits.	14	450*
	Tie into 4 each, 4-inch HDPE pipes to 4 each, 4-inch PVC conduits, install conduit and concrete encase to new manhole MH-I3MP-13, measuring 12 ft long by 6 ft wide by 7 ft high.	10	592
	Trench and install 4 each, 4-inch concrete encased PVC pipes from new manhole, MH-I3MP-13, to new MH-I3MP-16, measuring 12 ft long by 6 ft wide by 7 ft high. Cut, remove, and replace asphalt as needed to place conduit bank under the street. Install three new manholes.	3	1656
	Trench and install 2 each, 4-inch concrete encased PVC pipes from new manhole, MH-I3MP-16 to Building T-4. Cut, remove, and replace asphalt as needed.	8	269

Note:

\*Length provided is the length of trenching, unless directional boring is indicated in description. If directional boring is specified, the length provided is the length of the underground installation. Actual ground surface disturbance from directional boring would be limited to 12 ft by 12 ft entrance and exit pits.

**Table 2.0-2. Summary of Total Disturbed Area by I3MP Upgrade (Project areas depicted Figures 2.0-1 through 2.0-4)**

<b>Installation Method</b>	<b>Description</b>	<b>Linear Feet</b>	<b>Miles</b>	<b>Maximum Corridor Width</b>	<b>Disturbed Area (ft<sup>2</sup>)</b>
Excavation by Trenching Methods	4-Inch Conduit, Concrete Encased, to a depth of 24-inches minimum ground cover	19,761	3.74	10	197,610
Excavation by Cable Plowing Method	Direct Buried Fiber Optic Cable, Cable Plow Method	789	0.15	1.5	1,183
Directional Boring	Installation of 4-inch HDPE Pipe. Length provided is for underground boring with no surface disturbance, entrance and exit pits not included.	2,971	0.56	N/A	N/A
<b>Totals for Installation</b>		<b>23,521</b>	<b>4.45</b>	<b>N/A</b>	<b>198,793</b>
<b>Pit Type</b>	<b>Description</b>	<b>Pit Dimensions (ft)</b>	<b>Number of Pits</b>	<b>Disturbed Area per Pit (ft<sup>2</sup>)</b>	<b>Disturbed Area (ft<sup>2</sup>)</b>
Directional Boring Entrance & Exit Pits	Entrance and exit pits for each portion of directionally bored cable.	12 wide by 12 long	31	144	4,464
Handhole/Vault Pit	Excavate & Install a concrete handhole, measuring 4 ft long by 4 ft wide by 4 ft high.	6 wide by 6 long	3	36	108
Manhole/Vault Pit	Excavate & Install a concrete manhole, measuring 12 ft long by 6 ft wide by 7 ft high.	8 wide by 14 long	31	112	3,472
<b>Totals for Pits</b>		<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>8,044</b>
<b>Total Disturbance (ft<sup>2</sup>)</b>					<b>206,837</b>
<b>Total Disturbance (acres)</b>					<b>4.75</b>

Note: N/A = not applicable.



Figure 2.0-1. Overview of I3MP Upgrade Alignment and Project Areas

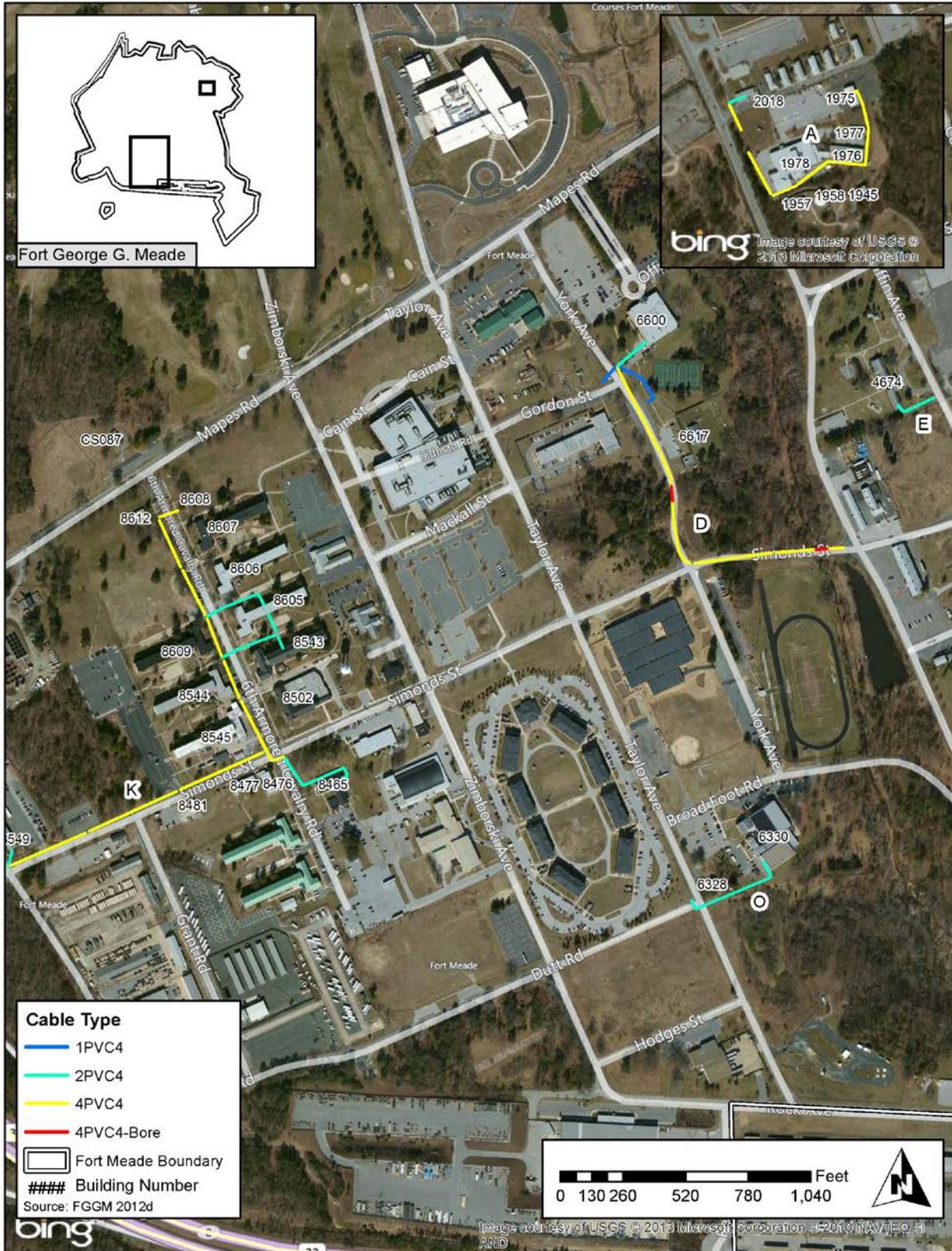


Figure 2.0-2. I3MP Upgrade Alignment Detail (1 of 3)

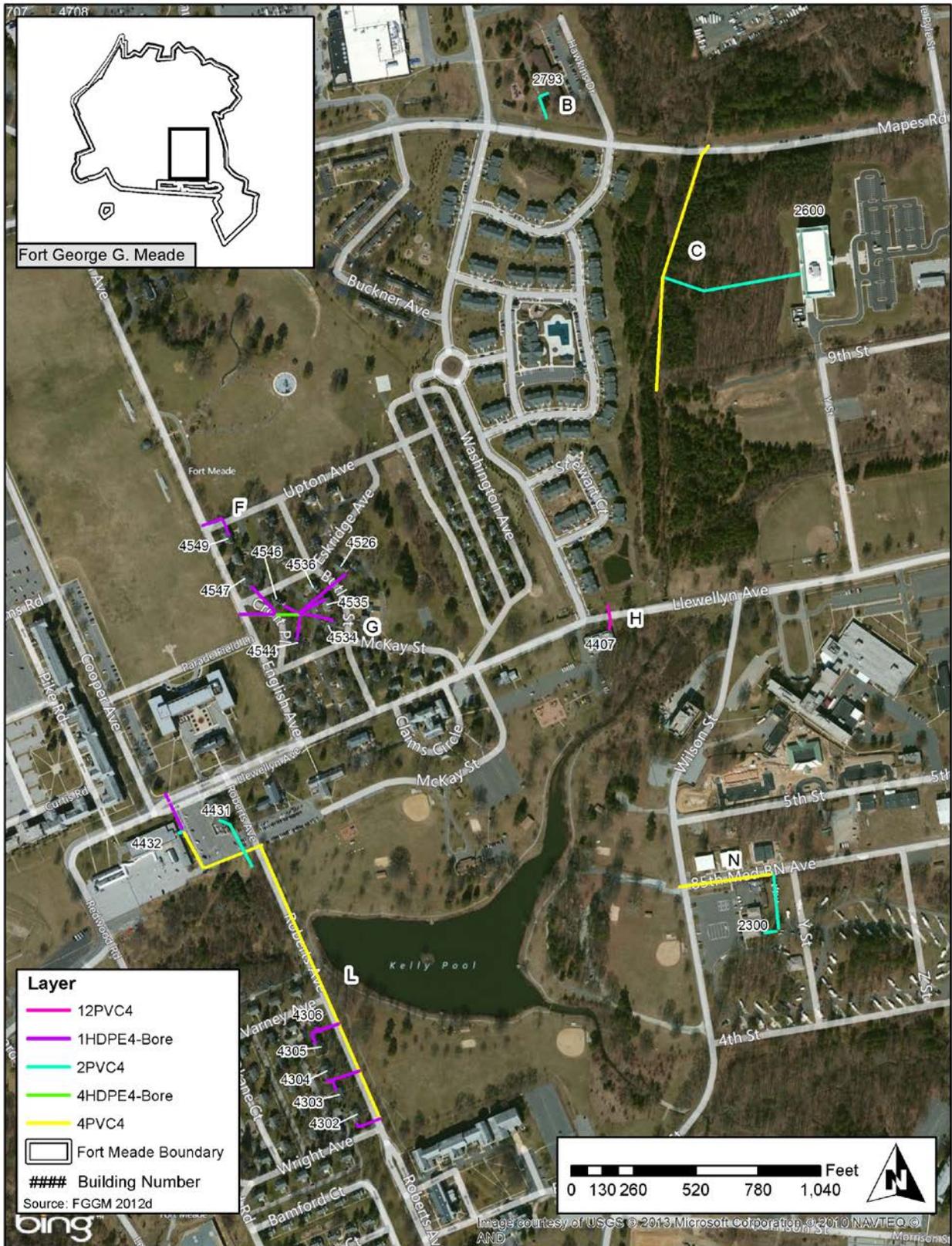


Figure 2.0-3. I3MP Upgrade Alignment Detail (2 of 3)

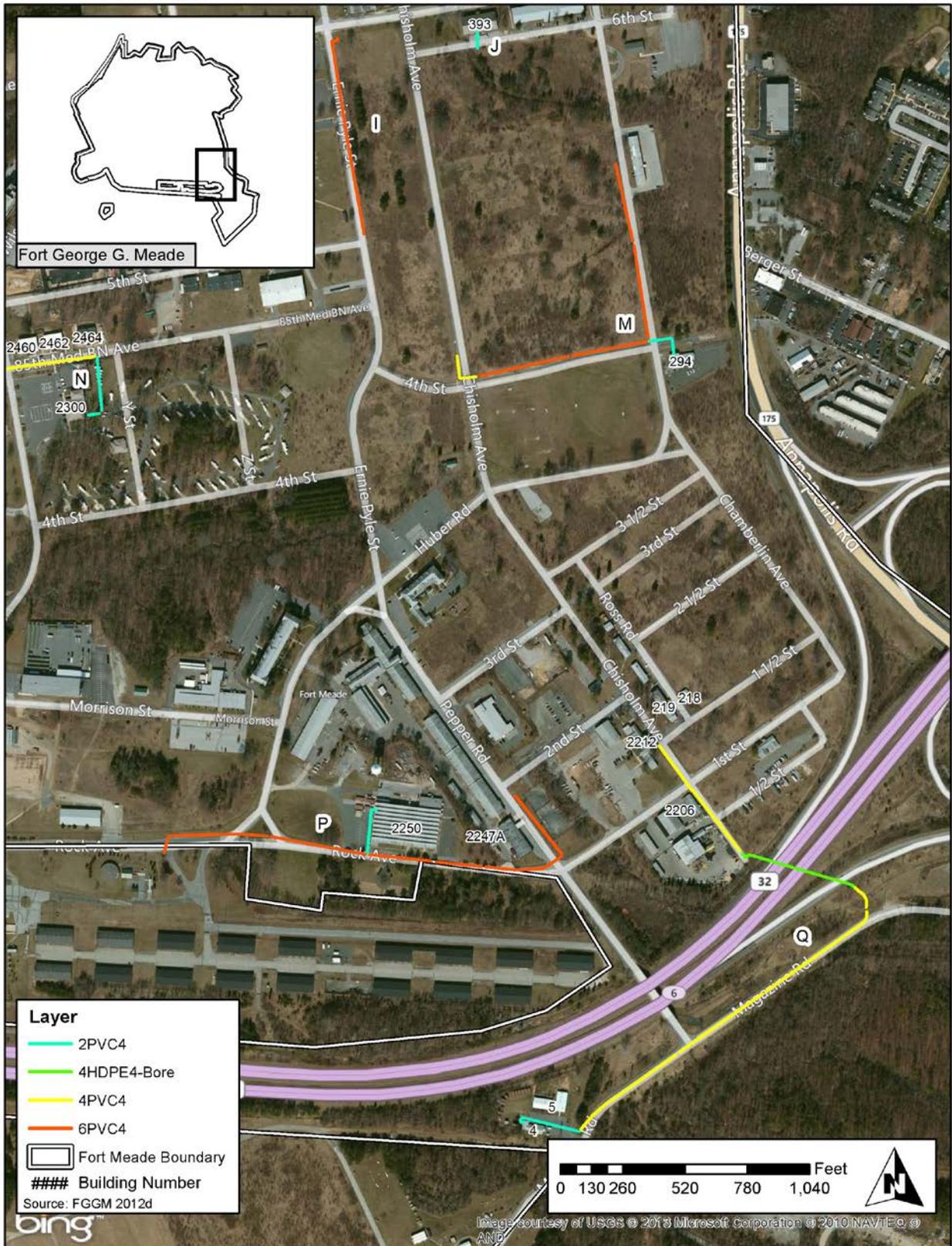


Figure 2.0-4. I3MP Upgrade Alignment Detail (3 of 3)

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### **3.0 ALTERNATIVES TO THE PROPOSED ACTION**

#### **3.1 No Action Alternative**

NEPA regulations require agencies to consider a “no action” alternative in their NEPA analyses and to compare the effects of not taking action with the effects of the action alternative(s). The No Action Alternative serves as a baseline to compare the impacts of the Proposed Action.

Under the No Action Alternative, the existing information structure would remain in place at Fort Meade and the I3MP utility upgrades would not be executed. Without the capacity improvements and modernization of the I3MP program, connectivity would deteriorate, disabling FGGM from maintaining its ability to communicate with deployed personnel and other installations. The No Action Alternative effects are analyzed in Section 5.0, *Environmental Effects*.

#### **3.2 Alternatives Eliminated from Detailed Study**

The I3MP PMO selected the most efficient methods to upgrade the OSP communication infrastructure and fiber optic network throughout the Installation to meet VOIP capability requirement. I3MP engineers considered various network topologies. Selection of the I3MP segment routes were made in consultation with the Fort Meade Department of Public Works Environmental Division (DPW-ED) in an attempt to avoid environmental impacts, while trying to achieve the most cost effective route and avoid environmental sensitive areas. Exploration for alternative routes to the Proposed Action did not produce options that provided the network connectivity redundancy or alternative paths that would effectively provide required fiber optic services. Therefore, no other alternatives to the Proposed Action are included for evaluation in this EA.

One example of providing connectivity redundancy and alternative paths is the connection to Building 2600 provided by Segment C. There is a future requirement for Building 2600 to have a fiber optic dual feed capability due to mission requirements in the building. A fiber optic dual feed provides two physically diverse fiber optic connectivity paths providing a high network availability and survivability that minimizes service interruptions caused by damage to underground cables. The fiber optic connectivity path chosen was selected to provide a diverse, alternative path necessary to fulfill the project requirements.

#### **3.3 Preferred Alternative**

The preferred alternative for providing the modernization communication infrastructure at Fort Meade is the I3MP utility upgrades described in Section 2.0. Minor changes to the alignment were made during planning to minimize impacts to natural resources. There is opportunity for additional alignment revisions as project designs are revised.

#### **3.4 Evaluation of Alternatives**

The analyses conducted for this Environmental Assessment have been performed as required by Federal environmental regulations. The Proposed Action is to install a total of 4.45 miles of underground fiber optic cable conduit, 31 manholes, and three handholes as part of the VOIP upgrade project. The Proposed Action would fully support the requirements of the Enterprise Strategic Plan and allow Fort

Meade to be able to communicate via voice, data and video files within the Installation, to deployed combat forces, and to other active Continental United States operations.

Table 3.4-1 presents the status of compliance with applicable Federal Statutes and Executive Orders. It is anticipated that the Proposed Action would cause temporary beneficial socioeconomic impacts due to construction employees patronizing local businesses during installation of the cable upgrades, and that short-term adverse impacts may occur to land use, visual resources, soils, air quality, noise, surface water, floodplains, stormwater management, coastal zone, forested areas, and landscape trees. Table 3.4-2 summarizes the beneficial and adverse impacts of the two alternatives considered, the Proposed Action and the No Action Alternative. Under the No Action Alternative, the proposed I3MP utility upgrades would not be completed. Without the capacity improvements and moderation of the Fort Meade outside plant infrastructure, FGM would not achieve the Enterprise Strategic Plan goals as outlined in the DoD Information Enterprise Strategic Plan 2010-2012.

**Table 3.4-1. Compliance with Federal Environmental Statutes and Executive Orders**

Statutes	Compliance
Clean Air Act, as amended (Public Law 88-206)	Full
Clean Water Act, as amended (Public Law 95-217)	Full
Coastal Zone Management Act (Public Law 92-583)	Full
Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C. §9601 et seq.)	Full
Fish and Wildlife Coordination Act, as amended (16 United States Code [U.S.C.] 661, et seq.)	Full
Migratory Bird Treaty Act	Full
National Environmental Policy Act of 1969 (Public Law 91-190)	Full
National Historic Preservation Act of 1966, as amended (Public Law 89-665)	Full
Noise Control Act of 1972, as amended (Public Law 92-574)	Full
Resource Conservation and Recovery Act (Public Law 94-580)	Full
Safe Drinking Water Act, as amended (Public Law 93-523)	Full
Solid Waste Disposal Act of 1965, as amended (Public Law 89-272, Title II)	Full
Toxic Substances Control Act of 1976 (Public Law 94-469)	Full
Watershed Protection and Flood Prevention Act of 1954 (16 U.S.C. §1101, et seq.)	Full
Wetlands Conservation Act (Public Law 101-233)	Full
Sikes Act	Full
Archaeological Resources Protection Act	Full
Executive Orders (EO)	Compliance
Floodplain Management (EO 11988)	Full
Protection of Wetlands (EO 11990)	Full
Environmental Justice in Minority Populations and Low-Income Populations (EO 12898)	Full
Federal Compliance with Pollution Control Standards (EO 12088)	Full
Protection of Children from Environmental Health Risks and Safety Risks (EO 13045)	Full
Strengthening Federal Environmental, Energy, and Transportation Management (EO 13514)	Full

Note: Full = Coordination for resources related to this Act or EO is complete (see Appendix A).

**Table 3.4-2. Summary of Effects of the Proposed Action and the No Action Alternative**

Resource	Proposed Action	No Action
Land Use	Potential for temporary adverse impacts to land use during installation. No long-term change in land use patterns.	No impacts
Visual and Aesthetic Value	Installation of cable would be underground; therefore, only temporary adverse impacts would occur during installation.	No impacts
Geology and Soils	Potential for temporary adverse impacts to soils would be managed through implementation of BMPs, an ESCP, SWMP waiver, and FGGM's SWPPP.	No impacts
Air Quality	Potential for short-term adverse impacts from equipment emissions during installation. Calculations indicate impacts would be below <i>de minimis</i> levels and not significant. See the Record of Non-Applicability (RONA) in Appendix B.	No impacts
Noise	Short-term adverse impacts would be minimal or negligible due to intermittent, transitory, and limited operation characteristics.	No impacts
Water Resources	No Impacts to groundwater Short-term adverse impacts to surface water or stormwater would be managed through BMPs, ESCP, SWMP waiver, and FGGM's SWPPP.	No impacts
Floodplains	Installation would primarily be underground or in paved areas. Short-term adverse impacts would be managed through BMPs, an ESCP, SWMP waiver, FGGM's SWPPP, and Maryland's Federal/State Application for the Alteration of any Floodplain, Waterway, Tidal, or Nontidal Wetland permitting process.	No impacts
Wetlands	No impacts expected as the Proposed Action was designed to avoid wetland impacts.	No impacts
Coastal Zone Management	A federal consistency determination (Appendix C) has been completed and the analysis shows that impacts to wetlands are being avoided and impacts to floodplains and forested areas are being minimized and these areas preserved to the maximum extent possible. Therefore, the Proposed Action would be consistent to the maximum extent practicable with the enforceable policies of the Maryland Coastal Zone Management Program and would not result in significant impacts to Maryland's coastal zone and natural resources.	No impacts
Biological Resources	Potential for short-term disturbance of wildlife due to installation activities. Adverse impacts to landscape trees and Forest Management Areas would be mitigated in accordance with FGGM's Forest Conservation Act and Tree Management Policy.	No impacts
Cultural Resources	No permanent adverse effects to Natural Register of Historic Places (NRHP) eligible resources expected. The cable would be installed underground. New cable and utility boxes placed into documented architectural resources using methods to avoid adverse impact.	No impacts

**Table 3.4-2. Summary of Effects of the Proposed Action and the No Action Alternative**

Resource	Proposed Action	No Action
Hazardous and Toxic Substances	Installation may potentially disturb areas containing hazardous or toxic substances (Installation Restoration Program [IRP] sites). Potential impacts would be minimized and prevented through the dig permit process and ensuring all work activities are designed, planned, and executed in accordance with IRP and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requirements, including but not limited to established land use, administrative, and engineering controls and to ensure that existing contamination is not transported to other areas or other environmental media.	No impacts
Utilities	The Proposed Action would improve connectivity for Installation communication. No impact expected as the dig permit process and coordination with Miss Utility would minimize chances of underground strikes and service interruptions during installation. Non-hazardous solid waste generated would be removed by a private contractor, and the installation contractor would comply with FGGM recycling policies, to the extent possible.	Communications and connectivity would continue to deteriorate, and disabling FGGM from maintaining its ability to communicate with deployed personnel and other installations.
Solid Waste and Recyclable Management	Non-hazardous solid waste generated would be removed by a private contractor, and the installation contractor would comply with FGGM recycling policies, to the extent possible.	No impacts
Transportation	Temporary adverse impacts to traffic within FGGM and Maryland Route 32 associated with installing cable in or along roadways. A State Highway Administration (SHA) Utility Permit would be obtained to minimize and mitigate impacts to Maryland Route 32.	No impacts
Socioeconomics, Environmental Justice, and Protection of Children from Environmental Health Risks and Safety Risks	No impacts are expected to any demographic group or children.	No impacts
Cumulative Effects	No permanent adverse cumulative impacts expected. During construction, there is the potential for minor temporary adverse impacts to land use, air quality, and noise. Temporary adverse impacts from the Proposed Action to soils, stormwater, floodplains, coastal zone, forested areas, hazardous and toxic substances, utilities, and transportation expected to be managed through established management plans, BMPs, and permitting processes.	No impacts

## **4.0 EXISTING CONDITIONS**

For the purpose of describing existing conditions and environmental effects, the project area is defined as the areas directly affected by the Proposed Action, including the areas where upgraded cables would be installed (i.e., segments), staging area, and stockpile area, as shown in Figures 2.0-1 through 2.0-4. The dimensions of the project area include a working corridor of approximately 10 ft wide along each segment. Each environmental, cultural, and social resource category was analyzed for its presence in the project area. Based on this analysis, impacts of the Proposed Action and No Action Alternative on the existing environment were evaluated in Section 5.0, *Environmental Effects*.

### **4.1 Land Use**

#### **4.1.1 Regional Land Use**

FGGM is located in the northwest corner of Anne Arundel County, Maryland and is accessible from Maryland Routes 32 and 175.

There is a mix of land use surrounding the FGGM area including, high and medium density residential, single family residential, commercial, office, institutional, light industrial, and undeveloped forest and open space uses. The Tipton Airport is located south of the Installation and south of Maryland Route 32. The airport has been privately owned since 1999 and is located on a former US Army airfield that was closed in 1995. To the south of the Installation is the Patuxent Research Refuge, part of the USFWS's National Wildlife Refuge System. The Refuge is comprised of 12,841 acres and includes land formerly owned by the US Department of Agriculture (USDA) and the DoD. The NSA complex is adjacent to the western boundary of FGGM. The majority of developed land in the immediate vicinity of FGGM is located to the north and east of the Installation (USFWS 2012). These uses directly support the needs of military and civilian personnel assigned to the Installation or support the Installation mission through research, development, test, and evaluation.

#### **4.1.2 Land Use at Fort Meade**

Land use at Fort Meade is a mix of professional/institutional, troop, ranges and training, industrial, residential, and community uses. Fort Meade has administrative buildings, industrial areas, family housing units, schools, recreational areas, a shopping complex, ambulatory care center, and range and training areas (Department of Army 2012; FGGM 2012a).

### **4.2 Visual and Aesthetic Value**

The visual and aesthetic value of the Installation is composed of natural and built features of the landscape. These features include water, landforms, historic landmarks, and other cultural and environmental elements that are visible from public spaces and when combined, are referred to as a viewshed. Characteristic landforms and water resources on FGGM are discussed in the following sections. The general viewshed at Fort Meade is enhanced by the Fort George G. Meade Historic District located in the southern portion of the Installation. This Historic District is composed of a number of one- to three-story brick buildings that are significant for their association with nationwide patterns of military post construction in the 1920s and 1930s. A 1940s brick water treatment plant (WTP) and three bridges constructed by German prisoners of war also contribute to the visual and aesthetic value of the Installation.

### 4.3 Geology and Soils

#### 4.3.1 Geology

FGGM is located in the Embayed Section of the Atlantic Coastal Plain Physiographic Province with the majority of FGGM located in the Glen Burnie Upland Rolling District. The western portion of FGGM is located on the Upper Patuxent Valley Area. The Glen Burnie Rolling Upland District is primarily underlain by quartzitic sands, gravels, silts, and clays, which tend to be micaceous. The Upper Patuxent Valley Area is often underlain by Quaternary alluvium consisting mainly of quartzitic sands, gravels, silts, and clays. FGGM is located in an area that historically has experienced low levels of seismic activity.

#### 4.3.2 Soils

Based on soil data provided by FGGM, the project area is primarily underlain by the Evesboro and Galestown complexes. The Evesboro series is formed from sandy marine and eolian deposits and is a very deep, excessively drained sandy loam, which is typically found in uplands. The Galestown series is formed from sandy eolian deposits and fluviomarine sediments and is a very deep, somewhat excessively drained, loamy sand typically found in the uplands. Other soil series identified within the proposed project area include the Bibb-luka, Downer, Keyport, Muirkirk, Udorthents, and Woodstown. Areas of “Urban land” and “Cut and fill land” were also identified as map units in the soil survey (Natural Resources Conservation Service [NRCS] 2012). The urban land designation includes areas with or adjacent to pavement and buildings. The cut and fill land designation is indicative of a soil that has been so disturbed it can no longer be identified with a soil series. Disturbance of this level is typically due to grading and filling by heavy equipment. Figure 4.3-1 depicts the soil classifications of the project area, which are explained in Table 4.3-1.

**Table 4.3-1. Soil Unit Names and Labels at FGGM (FGGM 2012d, NRCS 2012)**

Unit Label	Unit Name	Soil Description
Bm	Bibb-luka Silt Loams	Very deep, poorly drained, level to nearly level soil on flood plains
DoB	Downer Loamy Sand	Very deep, well drained soils on uplands
DrB	Downer-Urban Land Complex	Very deep, well drained soils on uplands
EoB	Evesboro Loamy Sand	Very deep excessively drained soil on uplands
EsC	Evesboro-Galestown Loamy Sands	Very deep excessively drained soil on uplands
EuB	Evesboro-Urban Land Complex	Very deep excessively drained soil on uplands
EuD	Evesboro-Urban Land Complex	Very deep excessively drained soil on uplands
KrB	Keyport-Urban Land Complex	Very deep, moderately well drained soil on uploads
MzB	Muirkirk-Urban Land Complex	Deep, well-drained to somewhat excessively-drained soil on uplands
MzD	Muirkirk-Urban Land Complex	Deep, well-drained to somewhat excessively-drained soil on uplands
UdB	Udorthents	Abandoned or active borrow pits and landfills and cut and fill areas
UdD	Udorthents	Abandoned or active borrow pits and landfills and cut and fill areas
Ur	Urban Land	Land mostly covered by streets, parking lots, buildings and other structures of urban areas
WdA	Woodstown Loam	Deep, moderately well-drained soil on uplands and terraces
WdB	Woodstown Loam	Deep, moderately well-drained soil on uplands and terraces

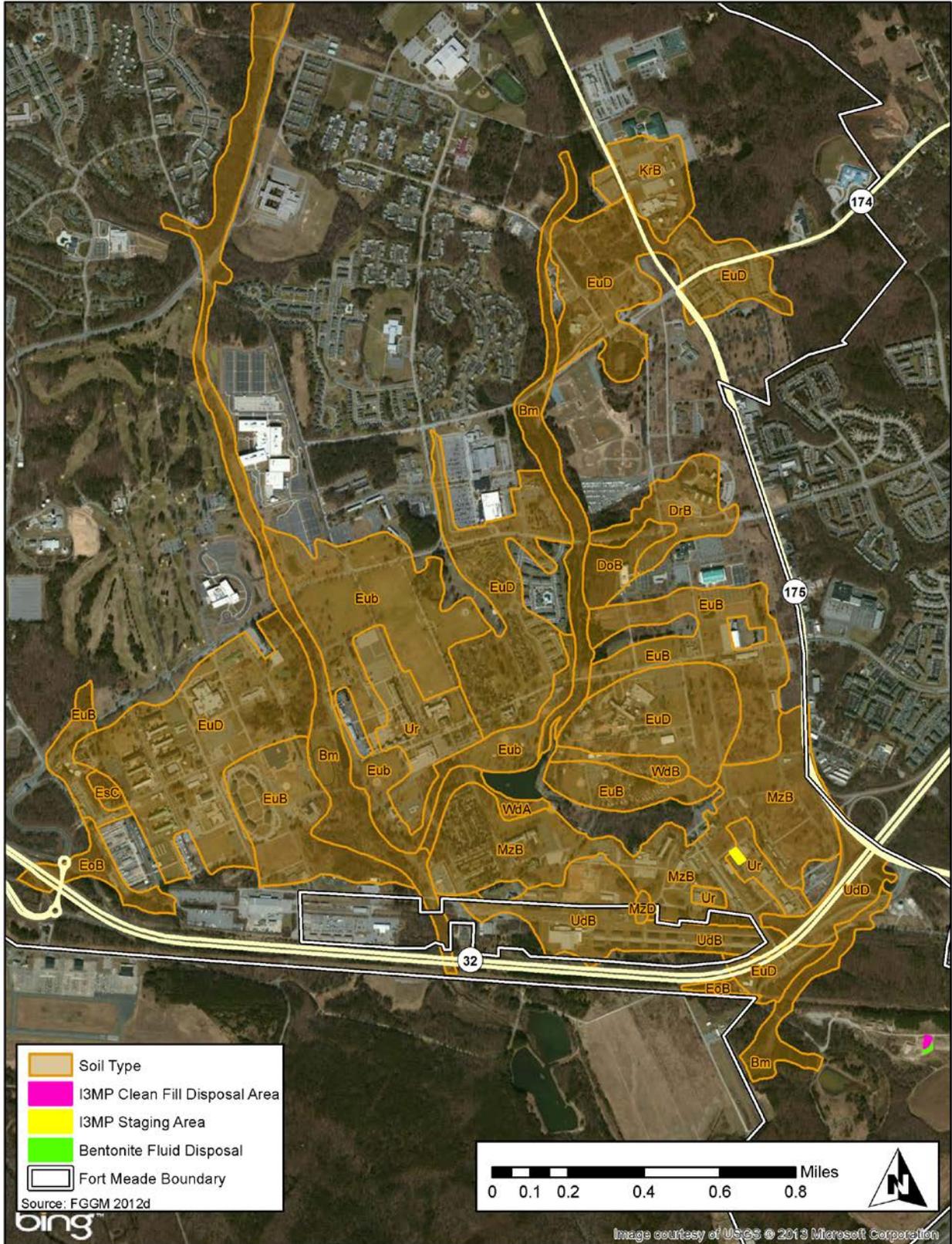


Figure 4.3-1. Soil Units in the Proposed I3MP Project Area

Proposed soil disturbing activities are managed in accordance with Code of Maryland Regulations (COMAR) Title 26.17.01.05, which indicates land disturbing activities that disturb less than 5,000 ft<sup>2</sup> and less than 100 cubic yards (CY) of earth are exempted from the requirement to get an approved ESCP.

#### 4.4 Air Quality

Air quality in a given location is described by the concentration of various pollutants in the atmosphere. A region's air quality is influenced by many factors including the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. The significance of the pollutant concentration is determined by comparing it to the federal and state ambient air quality standards. The Clean Air Act and its subsequent amendments (CAAA) established the National Ambient Air Quality Standards (NAAQS) for what are commonly referred to as "criteria" pollutants: ozone (O<sub>3</sub>); carbon monoxide (CO); nitrogen dioxide (NO<sub>2</sub>); sulfur dioxide (SO<sub>2</sub>); suspended particulate matter (PM) less than or equal to 10 microns in diameter (PM<sub>10</sub>); fine particulate matter less than or equal to 2.5 microns in diameter (PM<sub>2.5</sub>); and lead (Pb).

These standards represent the maximum allowable atmospheric concentrations that may occur while ensuring protection of public health and welfare, with a reasonable margin of safety. Short-term standards (1-, 8-, and 24-hour periods) are established for pollutants contributing to acute health effects. Long-term standards (quarterly and annual averages) are established for pollutants contributing to chronic health effects.

Areas that comply with NAAQS are designated as attainment areas. Areas that violate ambient air quality standards are designated as nonattainment areas. Areas that have improved air quality from nonattainment to attainment are designated as attainment/maintenance areas. Areas that lack monitoring data to demonstrate attainment or nonattainment status are designated as unclassified and are treated as attainment areas for regulatory purposes.

Fort Meade is located in the Metropolitan Baltimore Intrastate Air Quality Control Region (AQCR), which is defined in 40 CFR Part 81.28. This AQCR includes Anne Arundel County, Baltimore City, Baltimore County, Carroll County, Harford County, and Howard County. The Proposed Action would specifically be located in Anne Arundel County.

The Metropolitan Baltimore Intrastate AQCR is classified (40 CFR 81.321) as nonattainment for PM<sub>2.5</sub> (annual NAAQS) and Subpart 2/moderate nonattainment for 8-hour O<sub>3</sub>. The MDE published the Baltimore Nonattainment Area PM<sub>2.5</sub> State Implementation Plan (SIP) and Base Year Inventory on March 24, 2008, and the plan was accepted by USEPA on December 10, 2012 (77 FR 73313). The MDE also published the Baltimore Nonattainment Area 8-hour O<sub>3</sub> SIP and Base Year Inventory on June 15, 2007. An earlier SIP to address the now revoked 1-hour O<sub>3</sub> standard was published in 1998 and subsequently approved by USEPA.

Major sources of air emissions at Fort Meade include boilers, generators, hot water heaters, storage tanks, and an on-site landfill that was closed in 1996. Beginning in 2007, the report began requiring data for greenhouse gases (GHGs). FGGM is currently providing data for three GHGs: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O).

#### 4.4.1 Hazardous Air Pollutants

In addition to the ambient air quality standards for criteria pollutants, national standards exist for hazardous air pollutants (HAPs). The National Emission Standards for Hazardous Air Pollutants regulate 188 HAPs based on available control technologies. Examples of HAPs include benzene, which is found in gasoline, and methylene chloride, which is used as a solvent and paint stripper. Examples of other listed air toxics include dioxin, asbestos, toluene, and metals such as cadmium, mercury, chromium, and lead compounds. The majority of HAPs are Volatile Organic Compounds (VOCs).

Air emissions data for Fort Meade is provided in the Emissions Certification Report that is submitted to the MDE annually. The report currently collects data for criteria pollutants that include SO<sub>2</sub>, CO, nitrogen oxides (NO<sub>x</sub>), PM<sub>10</sub>, VOCs, and HAPs. (Note that VOCs are not considered to be “criteria pollutants,” but are tracked and reported as precursors to the formation of ground level O<sub>3</sub>). Emission data from 2003 to 2011 shows the declining trend of HAP emissions from a high of 0.27 tons per year (TPY) in 2003 to 0.17 TPY in 2011.

#### 4.4.2 New Source Review and Prevention of Significant Deterioration

As part of the CAAA of 1977, Congress established the New Source Review (NSR) program. This program is designed to ensure that air quality is not significantly degraded from the addition of new and modified factories, industrial boilers, and power plants. In areas with unhealthy air, NSR assures that new emissions do not slow progress toward cleaner air. In areas with clean air, especially pristine areas like designated Class I areas, NSR assures that new emissions do not significantly worsen air quality.

The construction activities associated with the Proposed Action are temporary and would not be an issue with regard to Class I Prevention of Significant Deterioration areas, nor would any new major sources (greater than 250 TPY of any pollutant) be constructed as a result of the Proposed Action. Therefore, NSR and Prevention of Significant Deterioration requirements are not carried forward in the air quality analysis.

#### 4.4.3 General Conformity Rule

Federal actions proposed to occur in areas that are classified as nonattainment or maintenance by the USEPA must demonstrate that emissions from the action would not exceed emission allowances established in a state’s plan to attain or maintain the NAAQS. The General Conformity Rule establishes *de minimis* thresholds of emissions for federal actions with the potential to have significant air quality impacts. If a project located in an area designated as nonattainment or maintenance exceeds these *de minimis* thresholds, a general conformity determination is required. FGGM is in an area designated as a moderate O<sub>3</sub> (8-hour) nonattainment area and a nonattainment area for the annual PM<sub>2.5</sub> standard. Anne Arundel County is included in the east coast Ozone Transport Region. Because O<sub>3</sub> forms from other emissions, the analysis focuses on O<sub>3</sub> precursors, which include VOCs and NO<sub>x</sub>, as well as PM<sub>2.5</sub>. The region is in attainment for other criteria pollutants.

#### 4.4.4 Greenhouse Gas Emissions

GHGs are gases that trap heat in the atmosphere by absorbing infrared radiation. Scientific evidence indicates a trend of increasing global temperature over the past century due to an increase in GHG emissions from human activities. The most common GHGs emitted from natural processes and human activities include CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O. The main source of GHGs from human activities is the combustion

of fossil fuels, including crude oil and coal. Examples of GHGs created and emitted primarily through human activities include fluorinated gases (hydrofluorocarbons and perfluorocarbons) and sulfur hexafluoride.

Each GHG is assigned a global warming potential (GWP). The GWP is the ability of a gas or aerosol to trap heat in the atmosphere. The GWP rating system is standardized to CO<sub>2</sub>, which has a value of one. For example, CH<sub>4</sub> has a GWP of 21, which means that it has a global warming effect 21 times greater than CO<sub>2</sub> on an equal-mass basis (Intergovernmental Panel on Climate Change 2007). To simplify GHG analyses, total GHG emissions from a source are often expressed as a CO<sub>2</sub> equivalent (CO<sub>2</sub>e). The CO<sub>2</sub>e is calculated by multiplying the emissions of each GHG by its GWP and adding the results together to produce a single, combined emission rate representing all GHGs. While CH<sub>4</sub> and N<sub>2</sub>O have much higher GWPs than CO<sub>2</sub>, CO<sub>2</sub> is emitted in such higher quantities that it is the overwhelming contributor to CO<sub>2</sub>e from both natural processes and human activities.

Federal agencies on a national scale address emissions of GHGs by reporting and meeting reductions mandated in federal laws, EOs, and agency policies. The most recent EOs are 13423, Strengthening Federal Environmental, Energy, and Transportation Management and 13514, Federal Leadership in Environmental, Energy, and Economic Performance. Additionally, the USEPA promulgated the Final Mandatory Reporting of Greenhouse Gases Rule in 2009. Several states have promulgated more stringent laws as a means of reducing statewide levels of GHG emissions.

Air emissions data for Fort Meade is provided in the Emissions Certification Report that is submitted to MDE annually. GHG emissions have been tracked at Fort Meade since 2007, with the latest reported emissions of 37,078 TPY of GHG in 2011 (FGGM 2012b).

#### 4.5 Noise

The Noise Control Act of 1972 establishes a national policy to promote an environment for all Americans free from noise that jeopardizes their health and welfare. Sound levels are expressed in decibels (dB), usually weighted for human hearing. To describe “average” sounds on a 24-hour basis, the day-night level (DNL) metric is used. The DNL provides a single measure of overall noise impact and is the accepted single measure for determining human annoyance. The loudness of sound as heard by the human ear is measured on the A-weighted decibel (dBA) scale. Examples can be found in Table 4.5-1.

**Table 4.5-1. Common Noise Levels**

Source (at given distance)	Decibel (dB) Level	Typical Reaction
Civil Defense Siren (e.g., tornado, flood warning sirens) (100 ft)	140	Pain
	130	
Jackhammer (50 ft)	120	Maximum Vocal Effort
Pile Driver (50 ft)	110	
Ambulance Siren (100 ft)	100	Extreme Annoyance/ Discomfort
Motorcycle (25 ft) Power Lawnmower	90	
Garbage Disposal (3 ft) Alarm Clock	80	Intrusive
Vacuum Cleaner (3 ft)	70	
Normal Conversation (5 ft) Dishwasher	60	Normal Speech
Light Traffic (100 ft)	50	

**Table 4.5-1. Common Noise Levels**

Source (at given distance)	Decibel (dB) Level	Typical Reaction
Bird Calls (Distant)	40	Quiet
Soft Whisper (5 ft)	30	
Human Breathing (less than 5 ft)	20	Just Audible

Source: US Army Center for Health Promotion and Preventive Medicine 2006.

The DoD, Federal Aviation Administration, and US Department of Housing and Urban Development have established acceptance criteria for noise exposure. Residential units and other noise-sensitive land uses are “clearly unacceptable” in areas where the noise exposure exceeds the DNL of 75 dB, “normally unacceptable” in regions exposed to noise between the DNL of 65 to 75 dB, and “normally acceptable” in areas exposed to noise where the DNL is 65 dB or less. For outdoor activities, USEPA recommends DNL of 55 dB as the sound level below which there is no reason to suspect that the general population would be at risk from any of the effects of noise (FGGM 2012c).

#### 4.6 Water Resources

##### 4.6.1 Groundwater

The Patuxent, Upper Patapsco, and Lower Patapsco aquifers lie under the Installation. The Lower Patapsco and Patuxent aquifers are separated by the Arundel Clay formation. The Patuxent Aquifer consists of lenticular interfingering sands, silts, and clays capable of yielding large quantities of water. This aquifer is 200 to 400 ft thick and is the deepest of the three aquifers beneath FGGM. The Upper Patapsco Aquifer is unconfined and is considered the water table aquifer (Anne Arundel County 2007).

American Water Enterprises, Inc. (American Water) manages the potable water system at FGGM, which is provided by six groundwater wells located on the south side of the Installation. These wells withdraw raw water from the Patuxent Aquifer. The wells range in depth between 500 and 800 ft below ground surface. The Installation’s Water Appropriation Permit (No. AA1969G021 (06), expires June 2021) obtained from the MDE, limits raw water withdrawal to 3.3 million gallons per day (MGD) or approximately 1,200 million gallons per year (NSA 2010).

##### 4.6.2 Surface Water

Section 404 of the Clean Water Act (CWA) specifies that the placement of dredge or fill material into “Waters of the United States” such as streams or rivers requires a US Army Corps of Engineers (USACE) Section 404 Permit. Section 10 of the Rivers and Harbors Act prohibits the unauthorized obstruction or alteration of any navigable water of the United States. Furthermore, FGGM is located within the watershed of North America’s largest and most biologically diverse estuary, the Chesapeake Bay. To protect and restore this valuable estuary, Maryland joined a consortium of State and Federal agencies to establish the Chesapeake Bay Program partnership, which the Army’s conservation mission and FGGM’s BMPs support (Department of the Army 2013).

FGGM lies primarily within the Little Patuxent River watershed (Maryland watershed code number MD-02131105) of the Patuxent River Basin. There are three primary streams on FGGM, all of which drain to the Little Patuxent River. Midway Branch (Maryland watershed code number MD-02131105-R-1\_0954) is the main drainage on FGGM, which originates north of FGGM and bisects the Installation as it flows southward through the western portion of the Installation. The second largest drainage on FGGM, Franklin Branch (Maryland watershed code number MD-02131105-R-1\_0953) originates as an

intermittent stream in the northeastern portion of FGGM, near Meade Senior High School. Near the southern boundary of FGGM, Franklin Branch flows into Burba Lake, prior to the confluence with Midway Branch. Burba Lake is located in the southeastern portion of FGGM and, at approximately 8.5 acres, is the largest open water feature on FGGM. The Patuxent River (Maryland watershed code number MD-02131105-R-1\_0951) drains a small portion of FGGM located southwest of Route 32. A very small area in the northeast corner of FGGM drains to the Severn River (MD watershed code number MD-02131105-R-1\_0952). Several additional small unnamed tributaries drain portions of FGGM. All of the surface water on FGGM lies within of the Patuxent River Basin (Federal hydrologic unit code number 02060006) (USEPA 2012).

The Patuxent River drains an area of 932 square miles before emptying into the Chesapeake Bay, and is designated a “scenic river” under the Maryland Scenic and Wild Rivers Act of 1968 which mandates the preservation and protection of natural values associated with each designated river. The Act requires that State and local governments actively protect and enhance the qualities of the designated rivers. The Little Patuxent River is currently listed on Maryland’s list of impaired waters under Section 303(d) of the CWA. The impaired status is due to sediments, metals (cadmium) and nutrients (MDE 2012c; FGGM 2012c). As Total Maximum Daily Loads for these impairments are developed, FGGM facilities could be influenced by requirements to reduce or eliminate loadings in the watershed.

In all FGGM contains approximately 7.2 miles of perennial streams as well as other intermittent and ephemeral channels. FGGM provided stream and wetland survey data (FGGM 2012d, FGGM 2012e), which were used to identify streams within the proposed project area on Figure 4.6-1.

#### 4.6.3 Stormwater

Stormwater runoff is conveyed to the three primary drainages described in Section 4.5.2. The majority of runoff is carried by Midway and Franklin Branches. All stormwater runoff conveyances are eventually discharged to the Little Patuxent River. Runoff from developed areas is conveyed through an extensive storm sewer network and associated drainage structures, supplemented by swales, ditches, other drains, and retention ponds. FGGM employs a number of stormwater management initiatives, including low impact development, throughout FGGM to manage stormwater (FGGM 2012c).

Provisions of COMAR 26.17.02.01 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 state:

- A. The primary goals of the State and local stormwater management programs are to maintain after development, as nearly as possible, the predevelopment runoff characteristics, and to reduce stream channel erosion, pollution, siltation and sedimentation, and local flooding by implementing environmental site design to the maximum extent practicable and using appropriate structural BMPs only when necessary.
- B. These regulations for stormwater management apply to the development or redevelopment of land for residential, commercial, industrial, or institutional use, but do not apply to agricultural land management practices. This chapter specifies the minimum content of county and municipal ordinances, responsibilities of the Administration regarding the review of the county and municipal stormwater management programs, and approval of State-constructed projects for stormwater management by the Department of the Environment.

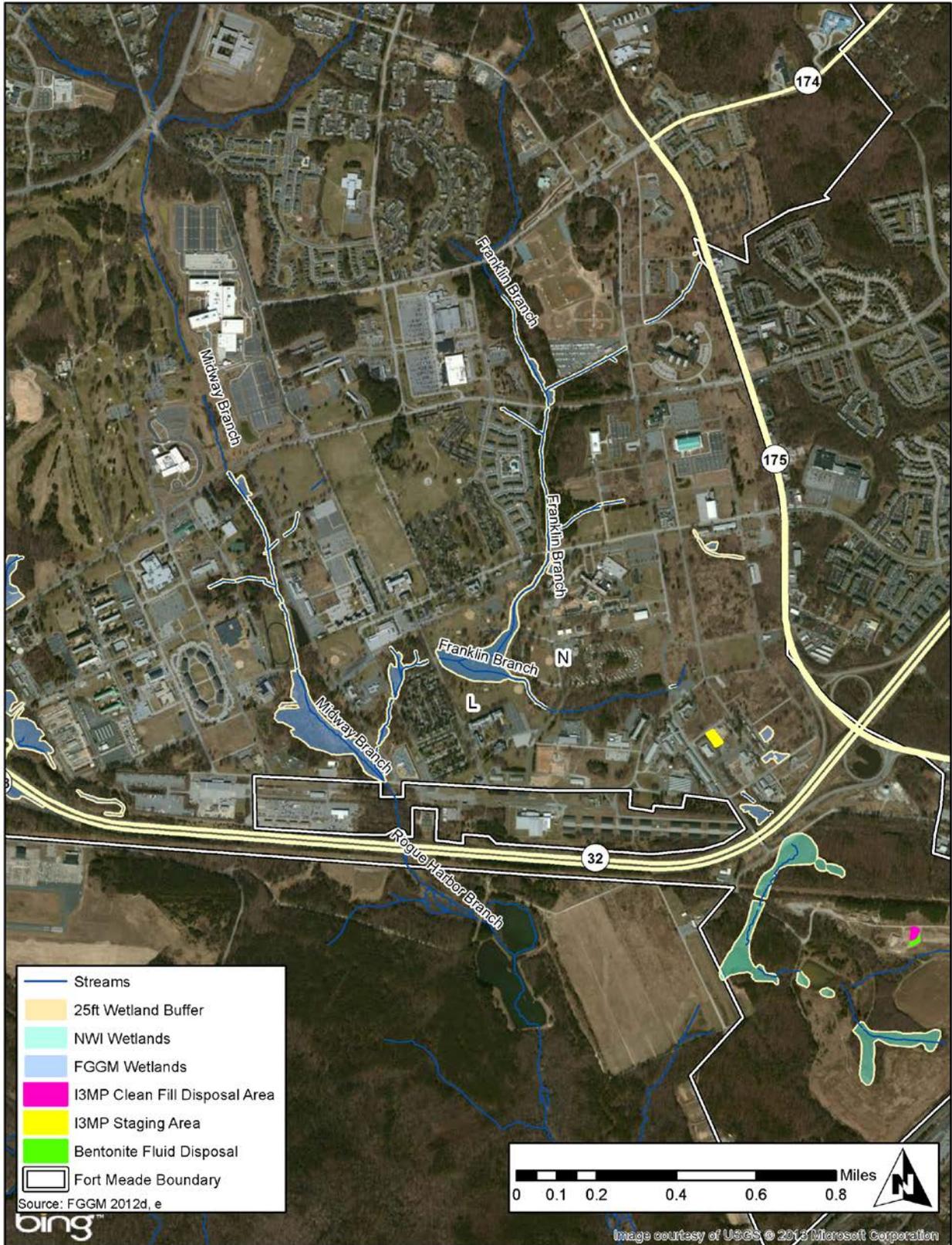


Figure 4.6-1. Surface Waters and Wetlands within the Proposed I3MP Project Area

Actions that disturb over 5,000 ft<sup>2</sup> of land or 100 cubic yards of earth are required to develop a state approved stormwater management plan. COMAR Title 26.17.02.05 describes the project types that require a stormwater management plan. Specific requirements of a stormwater management plan are described in COMAR 26.17.02.09.

Principles of environmental site design require developers to demonstrate that they have made all reasonable attempts to incorporate environmental site design into stormwater management planning. Environmental site design concepts include using natural areas and landscape features to manage runoff from impervious surfaces and minimizing the use structural BMPs to only where absolutely necessary. The 2010 Maryland Stormwater Management Guidelines for State and Federal Projects would be followed for all land development and disturbance at FGGM. FGGM also maintains a SWPPP that provides BMPs for controlling and preventing siltation and other contaminants associated with operations from impacting receiving surface waters.

#### 4.7 Floodplains

Fort Meade manages the areas designated as 100-year floodplains in accordance with EO 11988, *Floodplain Management*. EO 11988, *Floodplain Management*, defines floodplains as the lowland and relatively flat areas adjoining inland waters, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year. The area subject to a one percent chance of flooding is referred to as the 100-year floodplain. EO 11988 directs federal agencies to avoid construction in floodplains and establishes a process for analysis and public notice if development is unavoidable.

The Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps establish flood zones according to the varying levels of flood risk, 100-year, and 500-year flood zones. Zones with a 0.2% annual chance flood hazard areas are classified as 500-year floodplains (FEMA 2012). Figure 4.7-1 depicts the floodplains in the proposed project area, as per FEMA Map Panels 24003C0126E and 24003C0128E.

#### 4.8 Wetlands

Wetlands are defined in 40 CFR 230.3(t) as, "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Wetlands types are commonly categorized based on the Cowardin Classification System (USFWS 1979). The wetlands in the vicinity of the I3MP project area can be broadly grouped by the Cowardin System into palustrine emergent, palustrine scrub-shrub, and palustrine forested wetlands. For any activity that impacts wetlands a Federal Consistency Determination is issued as part of the State's wetland authorization process. Coastal Zone Consistency is discussed further in Section 4.9.

Disturbance of wetlands through dredging or filling activities requires a USACE Section 404 Permit. Section 10 of the Rivers and Harbors Act prohibits the unauthorized obstruction or alteration of any navigable water of the United States. Any activity that would result in discharge of material into a protected water body must obtain a Section 404 permit under the CWA. Additionally, under Section 401 of the CWA, an applicant for a permit to discharge dredged or fill material into wetlands is also required to obtain a certification from the State of Maryland ensuring that the proposed discharge would not result in a violation of the State's water quality standards.

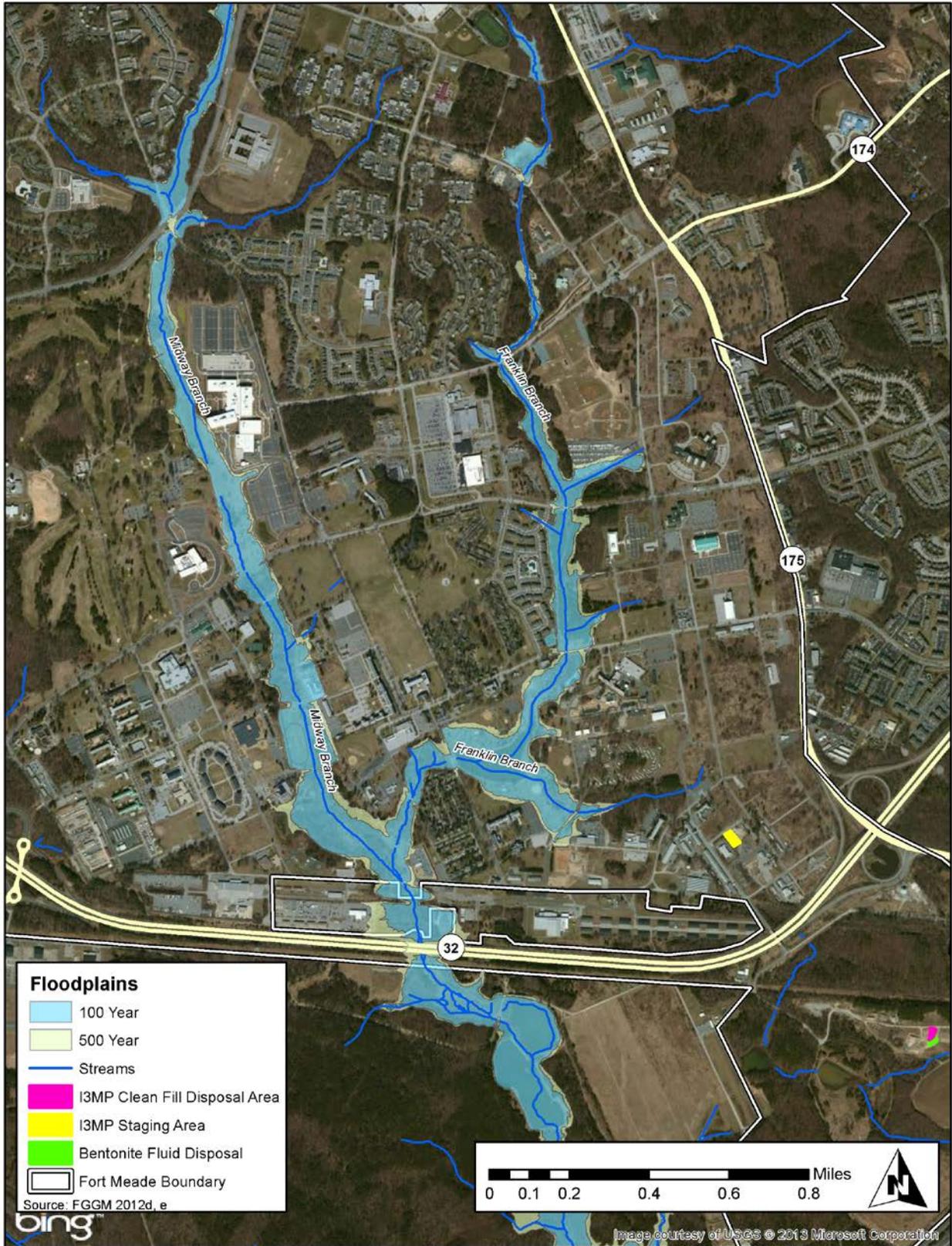


Figure 4.7-1. Floodplains within the Proposed I3MP Project Area

FGGM lies within the Chesapeake Bay watershed, a region supporting some of the most important wetland areas in the United States. In 1987 Maryland adopted the Chesapeake Bay Agreement Act. As a result of the agreement, the State of Maryland established the Nontidal Wetlands Protection Act (NWPA) in order to prevent an overall net loss of nontidal wetland acreage and function. The NWPA is administered by MDE. The NWPA requires a permit for any nonexempt activity that alters a nontidal wetland or its 25-ft buffer. Some activities may qualify for a letter of exemption; however, BMPs must still be followed. Any activity that requires a permit also requires mitigation for impacts to wetlands or wetland buffers (MDE 2012a). The 25-ft buffer is expanded to 100 ft for wetlands of special state concern as defined and designated in COMAR 26.23.06. No wetlands of special state concern are located at FGGM (MDE 2012b). FGGM complies with the NWPA policy of 25-ft buffers along wetlands, and voluntarily implements a 100 foot buffer along streams and abutting wetlands which is complied with to the extent possible.

There are approximately 271 acres of wetlands on FGGM. The majority of these wetlands are located on the floodplain of the Little Patuxent River, in the southwestern region of FGGM, or along Midway and Franklin Branch (FGGM 2012c). The locations of previously mapped wetlands based on FGGM planning level surveys can be found in Figure 4.6-1 (FGGM 2012d; FGGM 2012e). National Wetland Inventory mapping resources were used for mapping wetlands in the southeastern portion of the project area, where FGGM planning surveys did not cover. The location of wetlands within the main FGGM Installation were delineated and confirmed in the field with regulators during the planning level surveys (FGGM 2012e).

#### 4.9 Coastal Zone Management

The Coastal Zone Management Act (16 USC § 1451 *et seq.*) administered by the National Oceanic and Atmospheric Administration's (NOAA) Office of Ocean and Coastal Resource Management, provides management of the nation's coastal resources and, balances economic development with environmental conservation. States are tasked with creating and administering their Coastal Zone Management Program, which must address the protection of natural coastal resources, wildlife, and fish; include provisions to allow for public and local comment on decisions involving coastal resources; and manage development of and public access to coastal areas.

All of FGGM is located within the Maryland Coastal Zone Management Program area. MDE regulates activities that are proposed within the Coastal Zone Management Program 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. A Federal Consistency Determination has been prepared for the Proposed Action and can be found in Appendix C.

For more information on management of wetlands see Section 4.8, *Wetlands*.

#### 4.10 Biological Resources

Biological resources include plant and animal species and the habitats where they occur. Plant associations are referred to as vegetation and animal species are referred to as wildlife. Habitat can be defined as the resources and conditions present in an area that supports the existence of a plant or

animal. Although the existence and preservation of biological resources are intrinsically valuable, these resources also provide aesthetic, recreational, and socioeconomic values to society. This analysis focuses on species or vegetation types that are important to the function of the ecosystem, of special societal importance, or are protected under federal or state law or statute present in the vicinity of the areas that could directly or indirectly be affected by the Proposed Action.

#### 4.10.1 Vegetation

FGGM's vegetative cover includes landscaped lawn areas and street trees, forested areas, and open/land meadow. These areas constitute and are maintained by FGGM as green infrastructure, as defined by the State of Maryland. Green infrastructure features are natural areas that provide habitat for native plants and animals, protect water quality and soils, regulate climate, and perform other critical ecosystem functions. Green infrastructure components are classified as either hubs or corridors. Hubs are large, unfragmented habitat areas connected by corridors, such as stream valleys and mountain ridges, which allow for the movement of animals, seeds, and pollen from one hub to another. Preserving corridors between hubs improves long-term survival and biological diversity of Maryland's plants, wildlife, and habitats (MDNR 2003).

Approximately 1,795 acres of Fort Meade is forested. Much of the native forest in the area was cleared for agricultural purposes, prior to FGGM establishing operations. Larger areas of standing forest occur toward the perimeter of the Installation and many are connected through the installation by riparian forest corridors. Some larger tracts of forest are noted to be approximately 70 years old, with some stands predating FGGM's formation (FGGM 2012c).

Uplands forest areas consist of pine-hardwood forests dominated by, chestnut oak (*Quercus montana*), pitch pine (*Pinus rigida*), southern red oak (*Quercus falcata*), Virginia pine (*Pinus virginiana*), and white oak (*Quercus alba*). Riparian forest areas are characterized by bottomland hardwoods such as American holly (*Ilex opaca*), American sycamore (*Platanus occidentalis*), red maple (*Acer rubrum*), and sweetgum (*Liquidambar styraciflua*) (FGGM 2012c).

Urban forests are an important resource within FGGM. Urban forests provide ecosystem services such as improving water quality, wildlife habitat, recreation opportunities, and aesthetics while mitigating the effects of the urban heat island and air pollution. For more than fifty years, the installation has planted and maintained street trees. Use of native materials for landscaping has been encouraged for more than 15 years. There are many specimen trees within the installation that pre-date FGGM operations and have been preserved throughout all Post development.

To the extent possible, FGGM intends to maintain a campus-like environment and protect its forested areas in accordance with the Maryland Forest Conservation Act (FCA) in balance with the development required to maintain current and implement future missions. FGGM's forest stands are managed in accordance with MDNR regulations and support Army, federal, state, and local laws, regulations, policies, and initiatives to the fullest extent possible (FGGM 2012c).

FGGM manages potential impacts from proposed development and construction projects are in accordance with the FGGM Forest Conservation Act and Tree Management Policy. This policy is in compliance with the Maryland Forest Conservation Act standards and requires that the equivalent of 20% of the project area be forested in lieu of performing a Forest Stand Delineation and Conservation Plan for individual development projects. Street trees are to be replaced at a minimum of a 1:1 ratio,

with preference given to the preservation of specimen trees. Specimen tree replacement ratios would be calculated on a case by case basis. Forestation that cannot feasibly be performed within the project area shall be performed on other designated land areas within FGGM. The FGGM Forest Conservation Act and Tree Management Policy emphasizes the conservation of existing tree cover, preservation of dominant trees, and use of native species in reforestation efforts (FGGM 2009).

FGGM participates in the Department of the Army's Forestry and Conservation Reimbursable Program. This program provides revenues through the sale of forest products, which are then used for further enhancement of natural resources and ecosystem management (US Army Environmental Command 2011). There are no agricultural outleases or issuance of gaming and fishing licenses at FGGM (FGGM 2012c).

An *Invasive Plant Species Present* survey was completed at FGGM in 2001 to identify the location of invasive species in order to develop active management strategies and restore native communities. Invasive species found during the survey concentrated along forest margins, road edges, old field successional areas, and other disturbed areas. These species include Asiatic bittersweet (*Celastrus orbiculatus*), Asiatic tearthumb (*Polygonum perfoliatum*), common reed (*Phragmites australis*), English ivy (*Hedera helix*), garlic mustard (*Alliaria petiolata*), Japanese honeysuckle (*Lonicera japonica*), Japanese knotweed (*Polygonum cuspidatum*), multiflora rose (*Rosa multiflora*), poison ivy (*Toxicodendron radicans*), princess tree (*Paulownia tomentosa*), privet (*Ligustrum vulgare*), purple loosestrife (*Lythrum salicaria*), tartarian honeysuckle (*Lonicera tatarica*), tree of heaven (*Ailanthus altissima*), wicker microstegium (*Eulalia viminea*), and wisteria (*Wisteria sinensis*) (Eco-Science Professionals, Inc. 2001).

#### 4.10.2 Wildlife Resources

Wildlife resources include all vertebrate animals (i.e., mammals, reptiles, amphibians, birds, and fish) and sometimes invertebrate species or species groups such as mollusks or insects. Habitat types at FGGM include interiors and edges of natural areas, urban/ suburban areas, and aquatic habitats. Seventy-one bird, 10 mammal, 22 insect, and 6 reptile and amphibian species have been recorded on the Installation (USACE 2009). Due to development, the fauna on most of Fort Meade is characteristic of an urban-suburban environment. There are also some areas that have been identified by MDNR as habitat for Forest Interior Dwelling Birds. Forest Interior Dwelling Birds require large unfragmented areas of forest to support successful breeding and maintain population levels. "Interior" is defined as the area greater than 300 feet from the forest edge (MDNR 2000).

Most of the observed animal species are common to Anne Arundel County and the Central Maryland area. Wildlife occurring at FGGM includes white-tail deer (*Odocoileus virginianus*), groundhog (*Marmota monax*), gray squirrel (*Sciurus carolinensis*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), eastern chipmunk (*Tamias striatus*), field mouse and vole (*Microtus spp.*), mole (*Scalopus aquaticus*), and fox (*Vulpes vulpes*) (FGGM 2012c).

Common birds are American robin (*Turdus migratorius*), catbird (*Dumetella carolinensis*), mockingbird (*Mimus polyglottos*), Carolina chickadee (*Poecile carolinensis*), Carolina wren (*Thryothorus ludovicianus*), house wren (*Troglodytes aedon*), downy woodpecker (*Picoides pubescens*), common flicker (*Colaptes auratus*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), rock dove (*Columba livia*), mourning dove (*Zenaida macroura*), and song sparrow (*Melospiza melodia*). Eight bird species occurring at FGGM were listed on the Global and Maryland State Heritage designation list:

dark-eyed junco (*Junco hyemalis*), goldencrowned kinglet (*Regulus satrapa*), purple finch (*Carpodacus purpureus*), hermit thrush (*Catharus guttatus*), bluethroated blue warbler (*Dendroica caerulescens*), red-breasted nuthatch (*Sitta canadensis*), yellow-bellied sapsucker (*Sphyrapicus varius*), and winter wren (*Troglodytes troglodytes*). Purple finch and hermit thrush are also listed as Maryland State Species of Concern. Partners in Flight (PIF) Species of Concern present on FGGM include the species listed in Table 4.10-1.

**Table 4.10-1. Partners in Flight Species of Concern**

Species	USFWS Conservation Concern <sup>1</sup>	Partners in Flight (PIF) <sup>2</sup>		DoD PIF Mission-Sensitive Priority Species <sup>3</sup>
		High Overall Priority	High Regional Priority	
Baltimore oriole ( <i>Icterus galbula</i> )	x	x (B)		
Brown thrasher ( <i>Toxostoma rufum</i> )			x (B)	
Canada warbler ( <i>Cardellina canadensis</i> )	x			
Carolina chickadee ( <i>Poecile carolinensis</i> )			x (B,W)	
Chimney swift ( <i>Chaetura pelagica</i> )			x (B)	
Kentucky warbler ( <i>Geothlypis formosa</i> )	x	x (B)		x
Scarlet tanager ( <i>Piranga olivacea</i> )		x (B)		
Wood duck ( <i>Aix sponsa</i> )			x (W)	
Wood thrush ( <i>Hylocichla mustelina</i> )	x	x (B)		

Notes: B = Breeding, W = Wintering.

Sources: <sup>1</sup> USFWS 2008.

<sup>2</sup> DoD PIF 2012; DoD PIF 2013.

<sup>3</sup> DoD PIF 2012.

Virtually all birds are protected under the Migratory Bird Treaty Act (MBTA). The MBTA was designed to protect migratory birds (including their eggs, nests, and feathers) and their habitats. Wildlife is managed in accordance with the Sikes Act and in coordination with MDNR to prioritize the preservation and enhancement of existing habitat through measures such as invasive species control, tree cover preservation, and reforestation with indigenous species (FGGM 2012c).

#### 4.11 Threatened and Endangered Species

A species is considered “endangered” if it is in danger of extinction throughout all or through a significant amount of its range. “Threatened species” are defined as those that are likely to become endangered in the foreseeable future. The Endangered Species Act (ESA [16 USC §1531 *et seq.*]) of 1973 and subsequent amendments require the conservation of threatened and endangered species of animals and plants, and the habitats in which they are found. The ESA requires FGGM to conserve any threatened or endangered species within its boundary. Additionally, the ESA prohibits jeopardizing endangered and threatened species or adversely modifying critical habitats that contain biological or physical features essential to their survival. Critical habitat designations are based on space for individual growth, population growth, and normal behavior; available cover; food, water, air, light, minerals, or other nutritional or physiological requirements; breeding and offspring rearing habitat; protection from disturbance; habitats representative of the historic geographical and ecological distributions of the species.

No federally listed or proposed endangered and threatened species, or designated critical habitats, are known to occur on FGGM. Correspondence from USFWS dated March 13, 2013 indicated that except for

occasional transient individuals, no federally proposed or listed endangered or threatened species were known to exist within the project impact area. Rare, threatened, and endangered species habitat searches performed in 1993-1994 (EcoScience Professionals and C.A. Davis 1994) and in 2001 (EcoScience Professionals, Inc. 2001) as well as a 2009 Flora and Fauna Survey (USACE 2009) did not identify federally listed endangered or threatened species on Fort Meade.

Maryland's Nongame and Endangered Species Conservation Act (Annotated Code of Maryland 10-2A-01) governs the listing of endangered species. This Act is supported by regulations (COMAR 08.03.08), which contain the official State Threatened and Endangered Species list. State-listed species are not protected under the ESA; however, whenever feasible, the Installation cooperates with State authorities in an effort to identify and conserve State-listed species (US Army and Air Force Exchange Service [AAFES] 2006).

Fort Meade also contains the following Maryland species of concern:

- Downy bushclover (*Lespedeza stuevei*) – Maryland Watchlist
- Pubescent sedge (*Carex hirtifolia*) – Maryland Watchlist (Berman Tract)
- Purple chokeberry (*Aronia prunifolia*) – Maryland Watchlist
- Roughish panicgrass (*Panicum leucothrix*) – Maryland status uncertain

FGGM voluntarily maintains four Habitat Protection Areas (HPAs) on the Installation. HPAs are self-designated sensitive areas. None of these areas are located proximate to the Proposed Action. HPAs will be included in FGGM's revised Integrated Natural Resources Management Plan and are protected as a BMP.

#### 4.12 Cultural Resources

Cultural resources are prehistoric or historic sites, buildings, structures, districts, objects, or other physical evidence of human activity that are considered important to a culture or community for scientific, traditional, religious, or any other reasons. Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, empowers the Advisory Council on Historic Preservation (ACHP) to comment on federally initiated, licensed, funded, or permitted projects affecting cultural resources listed on or eligible for listing on the NRHP. Once cultural resources have been identified, they are evaluated for their eligibility for inclusion in the NRHP according to NRHP eligibility criteria (36 CFR 60.4). If the resource is determined to be eligible in consultation with the State Historic Preservation Officer (SHPO), an assessment is undertaken to identify any impacts that may result due to the Proposed Action. Only historic properties (i.e., eligible for or listed on the NRHP) are protected under the NHPA.

An area of potential effects (APE) must be defined in order to assess the effects of a Proposed Action on a historic property. An APE is defined as the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist (36 CFR 800.16[d]).

##### 4.12.1 Architectural Resources

Fort Meade was established in 1917 following America's entry into World War I and was utilized for training of soldiers and mobilization for the war effort. The facility was originally called Camp Meade and was completed in October 1918. Following the end of World War I, Camp Meade was used as a training facility and as a tank training school. The facility was renamed Fort George G. Meade in 1928

and became a permanent Army installation. FGGM became a troop replacement depot during World War II and later served as a prisoner of war (POW) camp for German and Italian prisoners captured in the war (USACE 2011).

The APE for architectural resources includes those buildings in which new fiber optic cables would be installed and those buildings facing the cable routes. The locations of these buildings are depicted on Figures 2.0-1 through 2.0-4.

Surveys of all architectural resources that are 50 years old or older at FGGM have been completed through 2011 and the structures evaluated for NRHP eligibility. No surveys have been completed since 2011. Seventeen architectural resources that are eligible for the NRHP have been identified at FGGM (Table 4.12-1). Thirteen of these resources are contributing resources of the Fort George C. Meade Historic District (AA-2095), which is eligible under Criteria A and C for important historical and architectural associations. Specifically, buildings associated with the permanent establishment of FGGM are significant for their association with nationwide patterns of military post construction in the 1920s and 1930s (Goodwin and Associates 1994). These buildings are not considered to be individually eligible. Of the NRHP-eligible buildings and structures listed in Table 4.12-1, only Building 4431 is in the APE for the Proposed Action, near Segment L.

**Table 4.12-1. NRHP-Eligible Architectural Resources at Fort Meade**

Building Number	Inventory Number	Building Name	Construction Date	Original Use	NRHP Eligibility
4215	AA-2095	Meade Hall	1928	Barracks	Contributing to HD
4216	AA-2095	Pulaski Hall	1928	Barracks	Contributing to HD
4217	AA-2095	Post Headquarters	1928	Barracks	Contributing to HD
4230	AA-2095	Fire Station	1934	Fire Station	Contributing to HD
4411	AA-2095	Old Post Hospital	1930	Hospital	Contributing to HD
4413	AA-2095	Garage	1931	Ambulance Garage	Contributing to HD
4415	AA-2095	Kuhn Hall	1931	Nurse's Quarters	Contributing to HD
4419	AA-2095	Chapel	1934	Chapel	Contributing to HD
4431	AA-2095	Theater	1933	Theater	Contributing to HD
4551	AA-2095	Hodges Hall	1934	Administrative	Contributing to HD
4552	AA-2095	Van Deman Hall	1940	Barracks	Contributing to HD
4553	AA-2095	Benjamin Tallmadge Hall	1929	Barracks	Contributing to HD
4554	AA-2095	Nathan Hale Hall	1929	Barracks	Contributing to HD
8688	AA-50	Water Treatment Plant	1941	Water Treatment Plant	Eligible
N/A	AA-2365	Leonard Wood Avenue Bridge	1946	German POW-built bridge	Eligible
N/A	AA-2366	Llewellyn Avenue Bridge	1945	German POW-built bridge	Eligible
N/A	AA-2367	Redwood Avenue Bridge	1944	German POW-built bridge	Eligible

Notes: N/A = Not applicable; HD = Historic District.

Source: USACE 2011.

The original NRHP evaluation of the Fort George C. Meade Historic District included numerous housing structures as contributing resources to the district (Goodwin and Associates 1994). The APE includes 13 residences (Buildings 4302, 4303, 4304, 4305, and 4306 (Segment L); 4526, 4534, 4535, 4536, 4544, 4546, and 4547 (Segment G), and 4549 (Segment F) that were considered contributing resources to the district.

The APE includes five architectural resources that turned 50 years old since completion of the 2011 surveys. These resources consist of the Vet Facility (Building 2018, Segment A), a courtroom (Building 4432, Segment L), a museum (Building 4674, Segment E), the chapel (Building 8465, Segment K), and an administration facility (Building 8476, Segment K). FGGM is currently in the process of evaluating their eligibility for inclusion in the NRHP (FGGM 2013b).

#### 4.12.2 Archaeological Resources

The APE for archaeology consists of the areas of direct effects (ground disturbance) for the Proposed Action. Ground disturbances for the Proposed Action would occur in 17 Segments (A through Q) on the Installation (all but one in the southern portion) and would generally occur in areas that have been previously disturbed, such as existing roadways, parking lots, and areas disturbed by construction.

An archaeological survey was conducted on FGGM and 33 historic and prehistoric sites were identified. Of the previously identified sites, 19 are prehistoric, 11 are historic, and 3 are both historic and prehistoric. None of the historic or prehistoric sites identified are within the APE.

#### 4.13 Hazardous and Toxic Substances

Hazardous substances are substances that are considered severely harmful to human health and the environment. A hazardous material is defined as any substance that is 1) listed in Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); 2) designated as a biologic agent and other disease causing agent, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any person, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations in such persons or their offspring; 3) listed by the US Department of Transportation as hazardous materials under 49 CFR 172.101 and appendices; or 4) defined as a hazardous waste per 40 CFR 261.3 or 49 CFR 171. Hazardous materials are federally regulated by the USEPA in accordance with the Federal Water Pollution Control Act; CWA; Toxic Substance Control Act (TSCA); Resource Conservation and Recovery Act (RCRA); CERCLA; and CAAA.

The affected environment for hazardous, toxic, and radioactive substances includes the areas identified for proposed fiber optic cable installation and the immediately surrounding soils, surface waters, and groundwater. Based on information provided by the FGGM DPW-ED, no hazardous or toxic substances are known to be routinely used or stored in the Proposed Action areas. A discussion of hazardous and toxic substances potentially present in soils or groundwater in or near the Proposed Action areas follows in Section 4.13.4, *Installation Restoration Program*, below.

##### 4.13.1 Resource Conservation and Recovery Act (RCRA)

Congress amended and reauthorized RCRA in 1984 through the Hazardous and Solid Waste Amendments (HSWA), and FGGM subsequently applied for a RCRA Part B Permit. In accordance with

RCRA provisions, FGGM began investigating potential solid waste management units (SWMU) in 1987. At the same time, site investigations began at the Active Sanitary Landfill site, the Defense Reutilization and Marketing Office (DRMO) site, the Clean Fill Dump site, and the Post Laundry Facility site. Contaminants including solvents, pesticides, polychlorinated biphenyls (PCBs), heavy metals, waste fuels, and waste oils were identified in soil and groundwater. Based on the results of these investigations, USEPA added FGGM to the CERCLA National Priorities List (NPL) in 1998 (FGGM 2005).

Hazardous waste is defined under RCRA as a solid waste (or combination of solid wastes), which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may: (1) cause or contribute to an increase in mortality or an increase in serious irreversible, or incapacitating illness; or (2) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. In addition, under RCRA, USEPA establishes four characteristics that would determine whether a substance is considered hazardous, including ignitability, reactivity, corrosivity, and toxicity. Any solid waste that exhibits one or more of these characteristics is classified as a hazardous waste under RCRA and, in turn, as a hazardous substance under CERCLA. No RCRA-regulated hazardous wastes are known to be stored or buried in the proposed project area. The potential presence of other CERCLA-regulated hazardous substances in the proposed project area is addressed in Sections 4.13.4 and 4.13.5 below.

#### **4.13.2 Spill Prevention, Control, and Countermeasure Plan**

FGGM maintains a Spill Prevention, Control, and Countermeasure (SPCC) Plan (USACE and FGGM 2012) for the prevention of oil discharges, for minimizing the magnitude of any oil discharge that does occur, and for limiting any resulting damage to the surrounding environment following an oil discharge.

No bulk fuels or oils are currently stored on the proposed project areas, and no oil pipelines are known to exist in the areas where subsurface trenching and utilities work would be conducted.

#### **4.13.3 Asbestos-Containing Materials and Lead-Based Paint**

In order to bring utilities into existing buildings, the contractor would be required to penetrate the exterior walls and pull cable through to the interior. Asbestos-containing materials (ACM) and lead-based paint (LBP) may be present in or on some of the buildings. ACM is defined as materials that contain more than 1% asbestos and are categorized as either friable or nonfriable. ACM may be found within older buildings and on buried steam lines at FGGM. The contractor will be required to prepare a project specific Asbestos Management and Abatement Plan that provides procedures for identifying, controlling and disposing of ACMs.

LBP includes paint having lead levels equal to or exceeding 0.5% by weight. LBP may be found in structures older than 1978. The contractor will be required to prepare a site-specific Lead Hazard Management Plan that describes the procedures for identifying, controlling and removing LBP that is encountered during the proposed construction.

#### **4.13.4 Installation Restoration Program**

The DoD established the Installation Restoration Program (IRP) in 1975 to provide guidance and funding for the investigation and remediation of hazardous waste sites caused by historical disposal activities at military installations (FGGM 2012f).

The fundamental goal of the FGGM IRP is to protect human health, safety and the environment, and the program is carried out in accordance with all federal, state and local laws. The primary federal laws are CERCLA, and Superfund Amendments and Reauthorization Act. In 2009, FGGM signed a Federal Facility Agreement with the USEPA, US Department of the Interior, and US Architect of the Capitol. This document establishes the role that FGGM and the USEPA each play in the restoration of the Installation and the formal mechanisms of this process. The IRP staff work closely with the USEPA, MDE, and local government agencies to ensure that cleanup processes are conducted properly and efficiently (FGGM 2005).

FGGM has conducted remedial investigation (RI) and cleanup activities at 46 Operable Unit (OU) sites, including approximately 135 areas of interest, since 1987. FGGM developed a Site Management Plan (SMP) with the objective to summarize the status of each environmental site in the CERCLA process for all response actions at FGGM, including sites that fall under the IRP, Base Realignment and Closure, and Military Munitions Response Program (MMRP). MMRP sites are addressed in Section 4.13.5. The SMP includes a history of the sites evaluated by the Fort Meade Environmental Partnership, a consortium consisting of the USEPA, MDE, USACE, FGGM, US Army Environmental Center (USAEC), and the Military District of Washington. The SMP is a management tool for planning, reviewing, and setting priorities for all remedial response activities to be conducted at the Installation. The SMP for Fiscal Year 2012 (FY12) includes all known sites at FGGM. Most of these sites have had environmental investigations and several have undergone or are undergoing response actions. Proposed environmental cleanup responses, actions, schedules, and milestones for response actions are included in the SMP. The SMP is updated annually to reflect revised priorities as work progresses and additional information becomes available (FGGM 2012g).

Figure 4.13-1 illustrates FGGM IRP sites that the project will pass through or within 50 feet. Although additional IRP sites exist at FGGM, Figure 4.13-1 only depicts sites in proximity of this project for the purposes of clarity. Table 4.13-1 provides a summary of each site listed on Figure 4.13-1 and the area of interest (AOI). "Open" sites are those sites that are currently undergoing investigation, clean-up, or some stage of remediation.

#### **4.13.5 Military Munitions Response Program**

Congress established the MMRP under the Defense Environmental Restoration Program (DERP) to address unexploded ordnance (UXO), discarded military munitions (DMM) and munitions constituents (MC) located on current and former defense sites. MMRP-eligible sites include other than operation ranges where UXO, DMM, or MC are known or suspected and the release occurred prior to September 30, 2002. Properties classified as operational military ranges, permitted munitions disposal facilities, or operating munitions storage facilities are not eligible for the MMRP. The DoD manages munitions response sites that are located on other than operational ranges under the MMRP. Munitions responses are response actions, including investigation, removal actions, and remedial actions that address the explosives safety, human health or environmental risks presented by UXO, DMM, and MC (Army Environmental Command 2012). Two sites are identified by FGGM as being actively managed under the MMRP: Inactive Landfill No. 2 and the Former Mortar Range (FGGM 2012h).

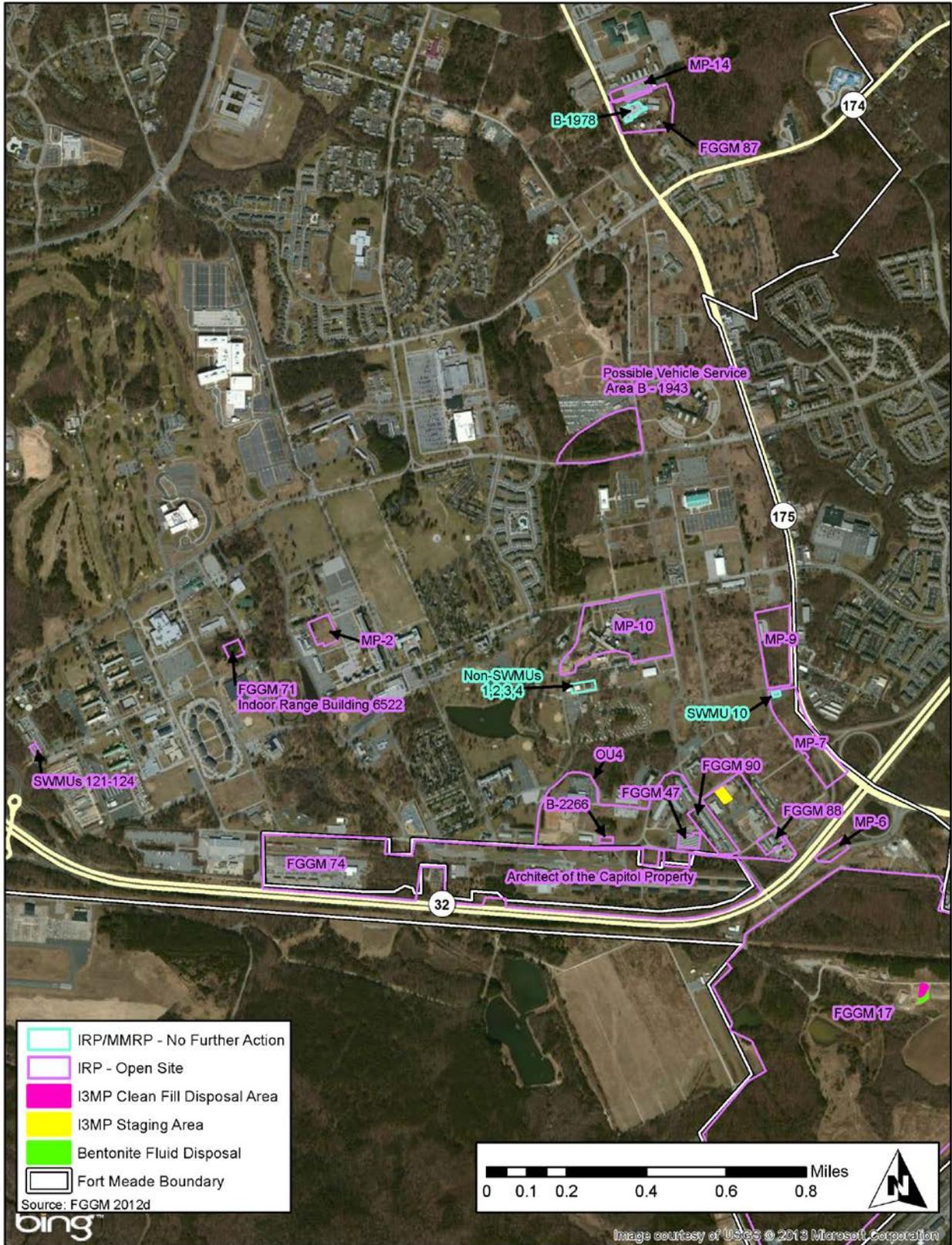


Figure 4.13-1. IRP and MMRP Sites within the Proposed I3MP Project Area

**Table 4.13-1. Installation Restoration Program Sites within 50 ft of the Proposed I3MP Project Area (as listed on Figure 4.13-1)**

Site Number	Site Name	Site Description	Contaminants of Concern	Current Status
FGGM 96 (OU-46)	Possible Vehicle Service Area B - 1943	A possible vehicle service and staging area was identified at this location in a 1943 aerial photograph. However, historic aerial photographs did not identify stained soils or stressed vegetation in this area. According to the 1952 land use map, Building 2722 was located on the eastern edge of this AOI and Building 2720 was located in the southern portion of the AOI. By 1988, most of this AOI is tree covered. There is little evidence to suggest that vehicles were serviced at this AOI; it was probably used as a parking lot.	VOCs, metals, Semi-volatile organic compounds (SVOCs), total petroleum hydrocarbon-diesel range organics (TPH-DRO), and TPH-gasoline range organics (GRO)	Preliminary Assessment/Site Inspection (PA/SI) is underway with a recommendation to collect 3 surface soil samples, install 1 groundwater monitoring well, collect a groundwater sample, and analyze the soil and groundwater samples for VOCs, SVOCs, metals, TPH-DRO, and TPH-GRO.
FGGM 96 (OU-46/ OU-4)	Former Building 2266	Former Building 2266 is part of OU-4 and was identified in a report as an AOI. No other information is available regarding past usage that would qualify this building as an environmental AOI.	None identified	RI is currently underway as part of the OU-4 SE Area Groundwater investigation, which includes Former Building 2266.
FGGM 17 (OU-12)	Closed Sanitary Landfill (CSL)	Landfilling operations were conducted at FGGM 17 from 1958-1976. FGGM 17 was constructed as an unlined facility with no leachate collection system and was initially designated as the Active Sanitary Landfill. FGGM 17 was divided into Cell 1 and Cell 2, separated by a drainage swale. Cell 3 (a third area that lacks topographic expression) was the only trench type disposal area. Cells 1 and 2 were capped with clay in 1992.  Surface water retention ponds are located along a small stream that bisects the site. A landfill-gas collection and treatment system operates along the eastern edge of the landfill cells to control emissions from the site.	VOCs, metals, and pesticides	Semiannual groundwater and surface water monitoring and active methane collection are ongoing at the CSL. The Army is also attempting to gain access to conduct an offsite investigation to further delineate the presence of benzene near the southeastern CSL boundary.

**Table 4.13-1. Installation Restoration Program Sites within 50 ft of the Proposed I3MP Project Area (as listed on Figure 4.13-1)**

Site Number	Site Name	Site Description	Contaminants of Concern	Current Status
FGGM 47 (OU-4)	Post Laundry Facility, Building 2250	Building 2250 (SWMU 59 and 60) was constructed in 1941 and used as a laundry facility through 1991. Dry cleaning operations were introduced in the late 1960s. Trichloroethene (TCE), perchloroethylene (PCE), and carbon tetrachloride were used during dry cleaning operations. Laundry and dry cleaning operations were discontinued in 1991 and the facility was converted to a recycling center.	VOCs, SVOCs, and metals	An RI investigation is ongoing; levels of VOCs in perched groundwater are at parts per million levels. Sub-slab vapor concentrations exceed screening levels.
FGGM 71 (OU-26)	Indoor Range Building 6522	Building 6522 (SWMUs 151-152) was identified as a past SWMU because it was formerly used as an indoor small arms target range and disposal practices for the impact range were unknown. There were no spills or reported releases identified in historical studies. Building 6522 was demolished in the late 1990s. A 550-gallon heating oil UST was located outside the eastern wall of Building 6522, but has been removed.	Metals	A PA/SI is underway with a recommendation to collect 3 surface soil samples, install 1 groundwater monitoring well, and collect and analyze the soil and groundwater samples for metals.
FGGM 74 (OU-29)	Architect of the Capitol Property	This area was authorized by Congressional action for transfer in 1993 from the Department of the Army to the US Army Ordnance Center to accommodate long term storage and service needs of the Library of Congress (LOC) and other Legislative Branch agencies.  Contamination on the parcel is due to past Army activities. This area was evaluated in 1994 for feasibility of development for the needs of the Legislative Branch agencies. At the time of the study, the area contained a temporary warehouse area, buildings formerly used as the Fort commissary, and buildings associated with the Transportation Motor Pool (TMP). A stream (Rogue Harbor Branch) flows south through the site, and wetlands are present in the vicinity of the stream.	VOCs, SVOCs, polychlorinated biphenyls (PCBs), petroleum hydrocarbons, pesticides, and metals	An RI was finalized as of April 2013, and the Feasibility Study is currently being drafted.

**Table 4.13-1. Installation Restoration Program Sites within 50 ft of the Proposed I3MP Project Area (as listed on Figure 4.13-1)**

Site Number	Site Name	Site Description	Contaminants of Concern	Current Status
FGGM 87 (OU-3)	Former Nike Control Site and B-1978	<p>The site consists of four buildings that supported the former Nike missile fire control site from 1955 to 1972.</p> <ul style="list-style-type: none"> <li>Existing Buildings 1976 and 1978 are one-story, concrete block, warehouse type structures, connected to each other by a narrow hallway.</li> <li>Building 1978 (SWMU 24) provided storage of small quantities of hazardous materials.</li> <li>Building 1977 (SWMU 23) provided storage for hazardous materials including paints, gasoline, diesel fuel, and adhesives.</li> <li>Building 1974 (SWMU 145), formerly located east of Building 1976, was a generator building prior to its demolition sometime between mid-1996 and early 1999.</li> </ul>	VOCs, SVOCs, polycyclic aromatic hydrocarbons (PAHs), TCE, bis (2-ethylhexyl) phthalate, and metals	A Revised Remedial Investigation Report was submitted for USEPA and MDE review in May 2011. MDE provided a No Further Comment letter on the report in June 2011. USEPA provided additional comments in August 2011. The Army's contractor is preparing responses to all USEPA comments and a revision to the RI Report.
FGGM OU-4	Southeast Area	OU-4 is comprised of several individual sites as noted on this table and Figure 4.13-1. Media of concern is soil, groundwater, and gas. The groundwater plume extends off-site to the southeast, and shallow groundwater may be encountered at 10 to 20 foot depths.	VOCs, SVOCs, PCBs, TPH-DRO, TPH-GRO, PAHs, fuel oil, metals, pesticides, and herbicides	RI activities are currently underway as part of the OU-4 Southeast Area groundwater investigation.
FGGM 88 (OU-4)	Former Tank Maintenance Facility Shop-1	<p>FGGM 88 includes Building 2207 (SWMU 37, DPW Storage and Receiving Warehouse), Building 2201 (DPW Storage and Supply Warehouse), Building 2206 (offices), Building 2204 (storage building), and Building 2200 (metal canopy for outdoor storage).</p> <p>Constructed in 1918, Building 2207 was used as a tank maintenance facility prior to 1973. Since at least the mid-1980s, it has been in use by the DPW as a receiving and storage facility.</p>	VOCs, SVOCs, PCBs, and metals	RI activities are currently underway as part of the OU-4 Southeast Area Groundwater investigation, which includes FGGM 88.

**Table 4.13-1. Installation Restoration Program Sites within 50 ft of the Proposed I3MP Project Area (as listed on Figure 4.13-1)**

Site Number	Site Name	Site Description	Contaminants of Concern	Current Status
FGGM 90 (OU-4)	Former Tank Cleaning Supply Warehouse	The complex is in OU-4 and includes Buildings 2240 (SWMUs 45 and 46), 2241 (SWMUs 47 and 48), 2242 (SWMUs 49 and 50), 2243, 2247, 2248 (SWMUs 51 and 52), and 2249 (SWMUs 53 and 54). Building 2240 is a separate single-story brick structure. Buildings 2241, 2242, and 2243 are connected in sequence and are elevated on wooden piers. Buildings 2247, 2248, and 2249 are smaller, wooden garage-type structures located behind the larger buildings. Other features on the site include a propane storage pen (Building 2247A), a flammable gas storage pen (Building 2248A), an empty compressed gas storage pen north of Building 2249, and a former 1,000-gallon above ground storage tank storing No. 2 fuel oil located behind Building 2242, was removed in 1995.	VOCs, SVOCs, PAHs, herbicides, pesticides, TPH-DRO, and metals	RI activities are currently underway as part of the OU-4 SE Area Groundwater investigation, which includes FGGM 90.
FGGM 96 (OU-46)	Motor Pool (MP)-2	MP-2 was identified as an area of interest based on a circa 1952 land use map that listed it in the south-central portion of Fort Meade. This AOI was also identified in historic aerial photographs, which show a vehicle service and storage area at this location on the 1963, 1970, 1975, and 1988 aerial photographs.	VOCs, SVOCs, TPH-DRO, TPH-GRO, and metals	A PA/SI is underway with a recommendation to collect 4 surface soil samples, install 4 groundwater monitoring wells and analyze soil and groundwater samples for VOCs, SVOCs, TPH-GRO, TPH-DRO, and metals.
FGGM 96 (OU-46)	MP-6	MP-6 was identified as an AOI because a 1952 land use map listed it in the south-eastern portion of the installation. According to the 1952 map, there are no buildings located within the outline of this MP. Building 111, however, was located on the north-eastern edge of this AOI. This AOI was not identified in historic aerial photographs of the installation. Since there were no former buildings at this AOI, it is unknown and unlikely that vehicles were serviced at this AOI. All surrounding buildings have been removed by 1993 and the soils have been excavated and graded. No stains or stressed vegetation was observed on any of the historic aerial photographs of this location. The buildings were as of 1996.	VOCs, SVOCs, and metals	A PA/SI is underway with a recommendation to collect 2 surface soil samples and analyze for VOCs, SVOCs, and metals.

**Table 4.13-1. Installation Restoration Program Sites within 50 ft of the Proposed I3MP Project Area (as listed on Figure 4.13-1)**

Site Number	Site Name	Site Description	Contaminants of Concern	Current Status
FGGM 96 (OU-46)	MP-7	Staining was observed at this AOI in 1943, 1957, and 1963 aerial photographs. The write-up for the 1995 aerial photograph no longer identifies this AOI as a vehicle service and storage area.	VOCs, SVOCs, metals, TPH-DRO, and TPH-GRO	A PA/SI is underway with a recommendation to sample soil and groundwater in the areas of past staining. Six surface soil samples will be collected. Two subsurface soil samples will be collected. Five groundwater monitoring wells will be installed and groundwater samples will be collected.
FGGM 96 (OU-46)	MP-9	Historic aerial photographs of the installation listed a vehicle service and storage area in this area in 1943, 1947, 1952, 1957, 1963, 1970, and 1975. This vehicle service and storage area was expanded after 1943; it covers more area on the 1947 aerial photograph and is larger yet on the 1952 aerial photograph, extending down to 4th Street. Stains appear in the aerial photographs from 1952, 1957, 1963, and 1970.	VOCs, SVOCs, metals, TPH-DRO, and TPH-GRO	A PA/SI is underway with a recommendation to sample soil and groundwater in the areas of past staining. Three surface soil, 3 subsurface soil and 4 groundwater samples (from 4 new groundwater monitoring wells) will be collected and analyzed for VOCs, SVOCs, TPH-DRO, TPH-GRO, and metals.
FGGM 96 (OU-46)	MP-10	MP-10 was identified as an AOI based on the circa 1952 land use map. This AOI was also identified in historic aerial photographs, which shows a vehicle service and storage area at this location on the 1938 aerial photograph. Part of this AOI is currently covered by the Kimbrough Army Community Hospital (FGGM 37) and the hospital boiler plant (SWMU 72). The 1952 land use map locates MP-10 in a small portion of the middle of this AOI. The 1943 historic aerial photograph outlines a larger area.	VOCs, SVOCs, and metals	A PA/SI is underway with a recommendation to sample soil and groundwater in the areas of past staining. Two soil and 2 groundwater samples (from 2 new groundwater monitoring wells) will be collected and analyzed for VOCs, SVOCs, and metals.
FGGM 96 (OU-46)	MP-14	MP-14 was identified as an AOI because the circa 1952 land use map. The AOI is also identified in historic aerial photograph study of the installation, which shows a vehicle service and storage area at this location on the 1943, 1947, 1952, 1957, 1963, 1970, and 1975. Five sumps are shown in the southern and eastern portion of this area on the 1957 aerial photograph. The sumps, or the area around them, were not discolored or stained. A stain is visible in the southwest portion of this area in the 1963 aerial photograph but not in subsequent aerial photographs.	VOCs, SVOCs, metals, TPH-DRO, and TPH-GRO	A PA/SI is underway with a recommendation to sample soil and groundwater in the area of past staining. One soil and 1 groundwater sample (from 1 new groundwater monitoring well) should be collected and analyzed for VOCs, SVOCs, metals, TPH-DRO, and TPH-GRO.

**Table 4.13-1. Installation Restoration Program Sites within 50 ft of the Proposed I3MP Project Area (as listed on Figure 4.13-1)**

Site Number	Site Name	Site Description	Contaminants of Concern	Current Status
FGGM 96 (OU-46)	Non-SWMUs 1, 2, 3, 4	Former Building 2454 was used for administration since its construction in the early 1940s and was demolished in 1999-2000. Former Building 2455 was used as barracks beginning in the early 1940s and later served as the Dental Headquarters administration. Former Building 2456 later served as the Community Counseling Center for social drug rehabilitation. Former Building 2457 later served as the eye clinic and administrative offices of Optometry Services, and they stored/used alcohol preps, acetone, office supplies, and household cleaners	None identified	The USEPA approved no further action for this AOI on 20 June 2011.
FGGM 96 (OU-46)	SWMU 10, Building 294	Building 294 was identified as a potential past SWMU because it was formerly used as a MP. Building 294 is used for administrative purposes and houses the DPW Entomology Department, where storage and mixing of pesticides takes place. Pesticides, herbicides, fungicides, and rodenticides are stored inside; an outdoor concrete slab is used for mixing chemicals. The AOI is also identified as a vehicle service and staging area based on historic aerial photographs.	None identified	The USEPA approved no further action for this AOI on 20 June 2011.
FGGM 96 (OU-46)	Former MP and WR (SWMU 121-128 and 149), Buildings 8549, 8550, and 8551	Building 8549 was constructed in the mid-1950s, served as a MP (SWMU 122) until the mid-1990s and as a biomedical maintenance area (SWMU 121) from 1994 to the late 1990s. Since then, it has been used as a practice hall and instrument storage for military musicians.  Building 8550 was constructed in the mid-1950s and used as a motor pool (SWMU 126) until December of 1993, when the 85th General Hospital Maintenance (SWMU 125) moved in. Building 8551 was used as a vehicle maintenance shop (SWMU 149). The wash rack (SWMU 128) and oil/water separator (SWMU 127) were identified as SWMUs because of systematic discharge of wash water to the oil/water separator.	VOCs, SVOCs, metals, TPH-DRO, TPH-GRO, cyanide, and PCBs	A PA/SI is underway with a recommendation to collect 3 surface soil samples and analyze for VOCs, SVOCs, metals, TPH-DRO, and TPH-GRO; collect 1 subsurface soil sample and analyze for SVOCs; install 6 groundwater monitoring wells, sample the wells and analyze the groundwater samples for VOCs, SVOCs, metals, TPH-DRO, TPH-GRO, cyanide, and PCBs.

## 4.14 Utilities

### 4.14.1 Potable Water

The source of potable water at FGGM is provided by six groundwater wells located on the south side of the Installation, which withdraw raw water from the Patuxent Aquifer. The water and wastewater systems were privatized in 2010. American Water currently owns and operates the WTP, which is located in the southwest quadrant of the cantonment area near the intersection of Mapes and O'Brien Roads (FGGM 2010). The WTP is a multimedia filtration plant that contains three aboveground clearwell storage tanks with a combined capacity of 2.3 million gallons and seven water storage tanks with capacities that range from 200,000 – 600,000 gallons (FGGM 2010). The Water Appropriation Permit (No. AA1969G021 (06), expires June 2021) obtained from the MDE limits raw water withdrawal to 3.3 MGD or approximately 1,200 million gallons per year (NSA 2010).

### 4.14.2 Domestic and Industrial Wastewater

American Water also owns and operates the wastewater collection and treatment system at FGGM, which includes 55 miles of gravity sewers, three miles of forcemains, pumping stations and the Wastewater Treatment Plant (WWTP). The gravity sewer pipes range from four to 30 inches in diameter and were installed between 1941 and 1987. The forcemains range from three to 24 inches in diameter. The two primary pumping stations, the Leonard Wood and the East Side collect wastewater flow from a network of gravity mains and forcemains. The WWTP has a design capacity of 12.3 MGD, but current average wastewater flow is approximately 2.5 MGD (NSA 2010). Once treatment of the wastewater is complete, the majority of the treated water is discharged into the Little Patuxent River, just downstream of the low water dam and north of the Simonds Bridge (FGGM 2010).

### 4.14.3 Communications

The NEC Corporation currently oversees the communications systems at FGGM for voice and data. The majority of the OSP telecommunications infrastructure consists of fiber optic cable, direct buried copper cable, existing maintenance holes, hand holes, and duct systems. A limited I3MP upgrade effort was completed at Fort Meade in 2010, and associated existing support infrastructure was subsequently modernized sufficiently. Voice communications are based on an original switch system, and are hosted in the Dial Central Office, Building 4407, which contains the switch room, equipment room and main distribution frame room. The data network relies on Ethernet and Very-High Data-Rate Digital Subscriber Line without the use of additional transport methods. The NEC controls an Unclassified but sensitive Non-classified Internet Protocol Router Network (NIPRNet) data network, which is configured in the standard I3MP architecture. Each Directorate at FGGM has their own LAN (NSA 2010; FGGM 2011).

### 4.14.4 Electric and Gas at Fort Meade

Baltimore Gas and Electric (BGE) provides both electrical power and natural gas to FGGM. Electrical power is supplied through four distribution substations. The primary source for electrical use at FGGM, not including NSA property, is a 110 kilovolt (kV) redundant feeder pair from the BGE Waugh Chapel Power Station. This pair follows Maryland Route 32 along the south and east sides of the Installation and terminates at substation #3. The second pair of 110 kV feeders originates west of the Installation at the

BGE High Ridge Power Station and back feeds the substation utilizing the Waugh Chapel distribution line. There are also 15 emergency standby generators located at various locations around FGGM that can provide secondary electrical power, if needed (FGGM 2010). Segment C follows an existing right of way with overhead electrical and telecommunications lines. The natural gas distribution system includes high pressure (100 pound force per square inch gauge) mains, which are owned by BGE and an extensive distribution network that includes BGE and government owned systems. The mains form a loop within the Installation and most buildings are within a few hundred feet of an active supply line (FGGM 2012a).

#### 4.15 Solid Waste and Recyclable Management

Solid wastes and recyclables generated at Fort Meade are managed as per Army Regulations (AR) AR 420-49 and AR 200-1. Wastes and recyclables generated at FGGM can be classified as institutional, industrial non-hazardous, construction and demolition, yard and wood, medical, and special (waste oil, scrap tires, batteries, ACM, food processing/grease, and sewage sludge). Wastes generated on-site, with the exception of construction projects, are primarily managed by Fort Meade's operations and maintenance contractor. All wastes generated from construction projects are the responsibility of the project proponent and their contractor. There are no active on-site landfills at Fort Meade. The on-site landfill stopped accepting waste and received closure certification in 1996. Solid waste from Fort Meade is disposed of at local municipal landfills (FGGM 2002).

All construction and demolition debris and refuse is recycled to the maximum extent possible and not less than 50%, in accordance with the Fort Meade Environmental Management System (EMS) policy. All refuse and recyclable disposal amounts are reported to the Contracting Officer's Representative on a monthly basis. The Contracting Officer's Representative shall forward a copy of the report to the Fort Meade Garrison, Environmental Division, 239 Chisholm Avenue, Fort Meade, Maryland 20755 (FGGM 2002).

#### 4.16 Transportation

The primary roadway network surrounding Fort Meade includes Maryland Route 32, Maryland Route 175, Maryland Route 198 (Fort Meade Road), and the Baltimore-Washington Parkway (designated as Maryland Route 295 north of Maryland Route 175). There are five gates providing access to Fort Meade, including:

- Gate 1: Mapes Road and Maryland Route 198
- Gate 2: Mapes Road and Maryland Route 175
- Gate 3: Rockenbach Road and Maryland Route 175
- Gate 6: Llewellyn Avenue and Maryland Route 175
- Gate 7: Reece Road and Maryland Route 175 (Demps Visitor Control Center)

The primary circulation routes through Fort Meade include Rockenbach Road extending from Maryland Route 175 south and Mapes Road extending east from Maryland Route 198 through Fort Meade to Maryland Route 175. Reece Road, where the Visitors Center is located, is accessed by Maryland Route 175. Circulation through the Installation is primarily provided along roadways consisting of one lane in each direction, with signals or stop signs (two-way, three-way, or four-way) at most intersections. The internal collector roadways include Ernie Pyle Street, MacArthur Road, Cooper Avenue, Llewellyn Avenue, Reece Road, Mapes Road, and Taylor Avenue.

#### 4.17 Socioeconomics, Environmental Justice, and Protection of Children from Environmental Health Risks and Safety Risks

##### 4.17.1 Socioeconomics

Socioeconomics describes the basic attributes and resources associated with the human environment, particularly population, employment, and housing. The region of influence (ROI) for this analysis is Anne Arundel County, Maryland, since it is the area most likely to be affected by the Proposed Action. The data are from the US Census Bureau and other publicly available sources.

As shown in Table 4.17-1, Maryland’s population grew approximately 11% between 1990 and 2000, and 9% from 2000 to 2010. Anne Arundel County’s growth rate was higher than the state’s from 1990 to 2000 (approximately 15%) and from 2000 to 2010 (10%) (US Census Bureau 2012a).

**Table 4.17-1. Population Growth Rates**

Region	1990 Population	2000 Population	2010 Population	Percent Growth 1990 to 2000	Percent Growth 2000 to 2010
Maryland	4,781,648	5,296,486	5,773,552	10.8%	9.0%
Anne Arundel County	427,239	489,656	537,656	14.6%	9.8%

Source: US Census Bureau 2012a.

Anne Arundel County’s total civilian and armed forces labor force is 303,909. As shown in Table 4.17-2, Anne Arundel County has a higher percentage of the population in the civilian and armed forces labor force (71.0%) than Maryland (69.4%). Anne Arundel County’s civilian unemployment rate (7.2%) is lower than the state’s (8.6%). Both Anne Arundel County and Maryland have civilian unemployment rates lower than the nation (10.3%) (US Census Bureau 2012b).

**Table 4.17-2. Employment Profiles**

Region	Percentage in Labor Force (Civilian and Armed Forces)	Civilian Unemployment Rate
Maryland	69.4%	8.6%
Anne Arundel County	71.0%	7.2%

Source: US Census Bureau 2012b.

FGGM is Maryland’s largest single employer. In FY 2008, FGGM employed more than 48,000 military, civilian and NSA personnel and had a total combined operational budget of over \$15.7 billion. FGGM operations, including tenant activities, generated a total of \$17.8 billion in economic activity in Maryland and created or supported 125,729 indirect and induced jobs, which paid an estimated \$9.2 billion in employee compensation (Maryland Department of Business and Economic Development 2010).

Anne Arundel County has 212,562 total housing units, of which approximately 6.2% are vacant. Approximately 74% of occupied units are owned and approximately 26% are rented. The home ownership rate of Anne Arundel County is higher than for Maryland (68%) (US Census Bureau 2012a). FGGM offers approximately 1,000 military family housing units, more than 600 officer and enlisted bachelor units, and 191 visiting officer and visiting enlisted units (FGGM 2013c).

#### 4.17.2 Environmental Justice and Protection of Children from Environmental Health Risks and Safety Risks

EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, was issued in 1994 to focus the attention of federal agencies on human health and environmental conditions in minority and low-income populations, including Indian tribes, to avoid disproportionately high and adverse human health or environmental effects of federal actions on these populations.

For the purpose of this evaluation, minority refers to people who identified themselves in the Census as Black or African American, Asian, or Pacific Islander, American Indian or Alaskan Native, other non-White races, or as being of Hispanic or Latino origin. Persons of Hispanic and Latino origin may be of any race. The CEQ defines minority populations as (1) the minority population of the affected area exceeds 50% or (2) the minority population percentage in the affected area is meaningfully greater than the minority population percentage in the general population or appropriate unit of geographical analysis. The geographical unit for comparison in this analysis is the State of Maryland.

Anne Arundel County has a total minority population of approximately 148,000 or 28% of the population; less than Maryland's 45% minority population (US Census Bureau 2012a). The percentage of people in Anne Arundel County whose income in the past 12 months was below the poverty level was approximately 6%, lower than Maryland's 10% rate (US Census Bureau 2012b). Anne Arundel County does not meet the CEQ definition of being a minority or low-income population.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, was issued in 1997 to identify and address issues that affect the protection of children. Children may suffer disproportionately more environmental health and safety risks than adults because their neurological, digestive, immunological, and other bodily systems are still developing and they consume more food, fluids, and air in proportion to their body weight than adults. Additionally, their behavior patterns may make them more susceptible to accidents because they are less able to protect themselves.

The percentage of Anne Arundel County's population that is less than 20 years old is 25.7%, slightly less than that of Maryland, 26.3% (US Census Bureau 2012a). Children reside on FGGM in the military family housing areas and would be present at the schools, community centers, and recreational areas.

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## **5.0 ENVIRONMENTAL EFFECTS**

This chapter presents an analysis of the potential impacts upon various components of the environment that could result from the Proposed Action. Following a format similar to Chapter 4, Chapter 5 discusses the Proposed Action and the No Action Alternative. Section 5.18 discusses the cumulative impacts of the Proposed Action, when combined with known past, current, and future projects at FGGM.

### **5.1 Land Use**

#### **5.1.1 Proposed Action**

Implementation of the Proposed Action is not expected to result in considerable changes to land use patterns on or around FGGM. During installation there would be a temporary disturbance to land use associated with installation. After the cable installation is completed, any short-term adverse impacts would be eliminated and land use would be restored to pre-construction conditions. The Proposed Action would remain consistent with the designated land use for the project area, which is predominantly institutional/professional with some areas of on-base residential or undeveloped. Land uses would not change as a result of the Proposed Action.

#### **5.1.2 No Action Alternative**

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. Therefore, there would be no impacts to land use.

### **5.2 Visual and Aesthetic Value**

#### **5.2.1 Proposed Action**

Short-term effects are expected to occur to the visual and aesthetic value of the Installation due to the presence of construction equipment for the duration of the proposed project. However, because the proposed upgrades would all be placed underground, including building tie-ins associated with historic structures, no long-term visual impacts would occur to the Installation or to the Fort George G. Meade Historic District following the completion of the project.

#### **5.2.2 No Action Alternative**

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. Therefore, there would be no impacts on the visual or aesthetic values of FGGM.

### **5.3 Geology and Soils**

#### **5.3.1 Proposed Action**

The implementation of the Proposed Action is expected to have short-term minor adverse impact on up to 4.75 acres of soils. Most of the impacted soils belong to disturbed classes such as urban or udorthent soil types within FGGM (Figure 5.3-1). Soil disturbance in the form of excavation, minor grading, earthmoving, and compaction would result from cable installation activities. As a result, soils would be compacted, soil layer structure would be disturbed and modified, and soils would be exposed, increasing the overall potential for erosion at the site. Soil productivity, (i.e., the capacity of the soil to produce

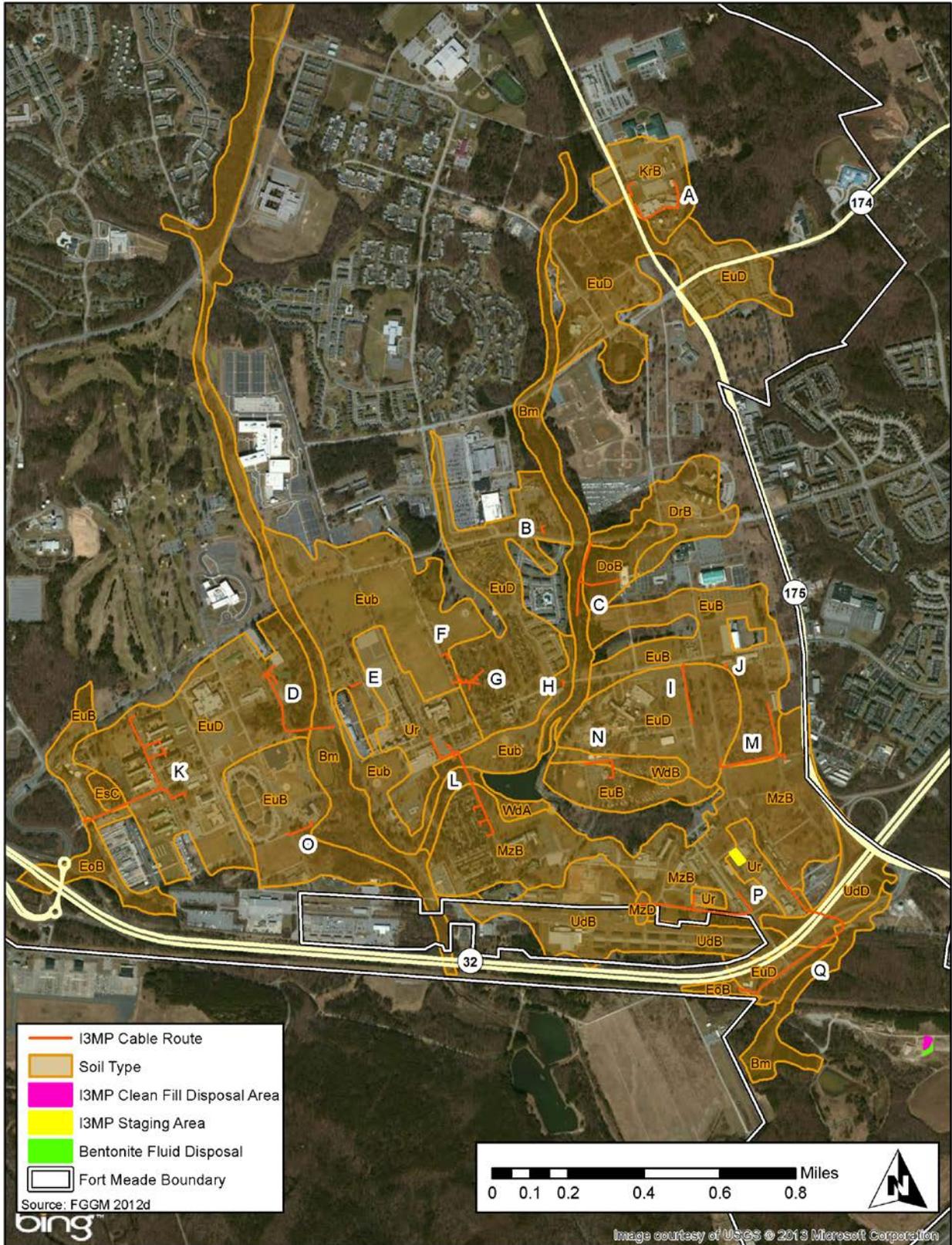


Figure 5.3-1. Soil Units and I3MP Cable Layout in the Proposed I3MP Project Area

vegetative biomass), would decline in disturbed areas. However, adverse impacts to soils from the Proposed Action would be minimized by proper construction management and planning, and the use of appropriate site-specific BMPs for controlling runoff, erosion, and sedimentation during installation activities.

The Project Proponent would obtain a MDE approved ESCP, a SWMP waiver, and perform all work according to FGGM's SWPPP. Standard erosion and sediment control techniques include using vegetative and structural protective covers (e.g., permanent seeding, groundcover), sediment barriers (e.g., straw bales, silt fence, brush), constructing water conveyances (e.g., slope drains, check dam inlet, and outlet protection), and repairing bare and slightly eroded areas quickly. The 2010 Maryland Stormwater Management Guidelines for State and Federal Projects (MDE 2010), and any guideline revisions, would be followed to minimize adverse stormwater impacts from any work.

#### 5.3.2 No Action Alternative

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. Therefore, there would be no impacts to geology and soils.

### 5.4 Air Quality

#### 5.4.1 Proposed Action

##### 5.4.1.1 Construction-Related Activities

Short-term, minor, adverse impacts to local air quality are expected due to dust and emissions during installation. Pollutant emissions resulting from proposed installation and operation activities have been evaluated for the Proposed Action. Pollutants considered in this air quality analysis include the criteria pollutants and HAPs measured by federal standards.

The Proposed Action involves the installation and subsequent operation of underground cables at FGGM. In order to assess the air quality impacts of the Proposed Action, emissions for the installation and operation segments of the action were compared to the General Conformity Rule *de minimis* thresholds for the O<sub>3</sub> precursors, VOCs and NO<sub>2</sub>, as well as PM<sub>2.5</sub> and its precursor SO<sub>2</sub>. For the criteria pollutants that the Metropolitan Baltimore Intrastate AQCR is designated as unclassifiable/better than national standards, the calculated emissions are compared to the 250-ton per year threshold. Appendix B contains the detailed emission calculations prepared to assess the air quality impacts of the Proposed Action.

Air quality impacts from the Proposed Action would occur from (1) combustion emissions due to the use of fossil fuel-powered equipment and (2) fugitive dust emissions (PM<sub>10</sub> and PM<sub>2.5</sub>) during earth-moving activities and the operation of equipment on bare soil. Fugitive dust emissions were calculated based on the total site disturbance projected for the overall installation project. Equipment usage was based on similar installation projects to estimate project combustion and fugitive dust emissions.

The emissions associated with the proposed installation of the cable are summarized in Table 5.4-1. The calculations indicate that annual emissions for proposed installation activities would not exceed the *de minimis* thresholds or the 250 TPY for any criteria pollutant. Air quality impacts associated with the

installation activities for the project would not be significant, as documented in a RONA included in Appendix B. Detailed calculations can also be found in Appendix B.

**Table 5.4-1. Estimated Emissions for Installation of New Cable Lines at Fort Meade**

Construction Activity	Air Pollutant Emissions (tons)					
	CO	NO <sub>x</sub>	VOCs	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Construction	0.06	0.17	0.01	0.002	12.07	1.22
Major Source Threshold	250	-	-	-	250	-
<i>de minimis</i> Thresholds	-	100	50*	100	-	100

Note: VOCs *de minimis* established for nonattainment areas located in Ozone Transport Region.

Project construction equipment would emit minor amounts of HAPs that could potentially impact public health. The main source of HAPs would occur in the form of diesel exhaust organic gases and particulates from the combustion of diesel fuel. The operation of proposed diesel-powered construction equipment would be mobile and intermittent over the course of the installation period, and would produce minimal ambient impacts of HAPs in a localized area. However, the operation of the diesel-powered equipment should include some BMPs, to include a restriction on excessive idling, adherence to equipment maintenance programs to ensure excessive emissions are not generated as a result of poor maintenance, and the use of particulate filters and ultra-low sulfur diesel fuel for applicable equipment. HAP emissions from construction equipment would not result in significant impacts to public health, as documented in the RONA in Appendix B.

On-base commuting traffic for construction crews is assumed to be a source of emissions associated with this project. Emissions from construction personnel traffic were calculated using the USEPA's MOVES2010 data. It is assumed that construction workers would make a total of 52 on-site vehicle trips in personally owned vehicles during the proposed six-month project. The results of the air quality analysis indicate that emission estimates for the proposed activities are below General Conformity Rule thresholds for NO<sub>x</sub>, VOCs, SO<sub>2</sub>, and PM<sub>2.5</sub>. Additionally, the major source comparative threshold is not exceeded for CO and PM<sub>10</sub>. The conclusion of the air quality analysis is that the Proposed Action would result in short-term minor adverse impacts and that a general conformity determination is not required. The RONA included in Appendix B documents this analysis and conclusion.

Annual GHG emissions associated with the Proposed Action construction activities are estimated to be 108 metric tons, well below the 25,000 metric tons of CO<sub>2</sub>e increase threshold proposed as an indicator for a quantitative and qualitative assessment in the draft NEPA guidance by the CEQ (CEQ 2010) (See Appendix B for detailed GHG calculations).

#### 5.4.1.2 Operations

Once the new cable lines have been installed, the equipment operations would not generate any air emissions. Calculations have therefore not been generated for the operational phase.

#### 5.4.2 No Action Alternative

Under the No Action alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. There would be no changes to the air emissions that occur at present.

## 5.5 Noise

### 5.5.1 Proposed Action

To characterize construction activity noise levels, USEPA data were used and are presented in Figure 5.5-1 (USEPA 1971).

Based on the USEPA criteria, construction noise resulting in an hourly equivalent sound level of 75 dBA at a sensitive receptor (e.g., school, hospital, residence) would represent a significant impact. Under the Proposed Action, the greatest noise levels would be generated during the earth moving/trenching phase and could reach a maximum of over 70 dBA, 50 ft from any of the proposed locations. Noise impacts due to installation activities would be minimal to negligible for the following reasons:

- Heavy equipment that would generate the highest noise levels would not be used consistently enough to exceed the hourly equivalent noise level of 75 dBA for more than 1 hour.
- Installation activities would be expected to occur between 7:30 a.m. and 5:30 p.m. and pose little impact to any neighboring communities.
- The installation itself is transitory, meaning the operations would be moving along the areas to be trenched, so that noise generated by the activity would be of short-term duration at any particular point along the routes.

In general, installation noise would be intermittent and short-term in duration, and no long-term (recurring) adverse noise impacts would result from implementation of the Proposed Action.

### 5.5.2 No Action Alternative

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. Therefore, there would be no construction equipment operating onsite or trucks traveling on and off the Installation and noise levels on the Installation would not change.

## 5.6 Water Resources

### 5.6.1 Proposed Action

#### 5.6.1.1 Groundwater

No impacts to groundwater are anticipated from the Proposed Action. Trenching and excavation activities associated with the Proposed Action would not penetrate to groundwater levels. Water consumption associated with the Proposed Action would be within American Water's Water Appropriation Permit (FGGM 2012c).

#### 5.6.1.2 Surface Water

Possible short-term minor adverse impacts to surface waters could result from the Proposed Action. Sediment could potentially enter the streams during construction, and turbidity could impact water quality. BMPs would be implemented to minimize potential impacts to surface waters through an ESCP, and potential impacts associated with erosion are further discussed in the Sections 5.6.1.3 and 5.6.2.3.

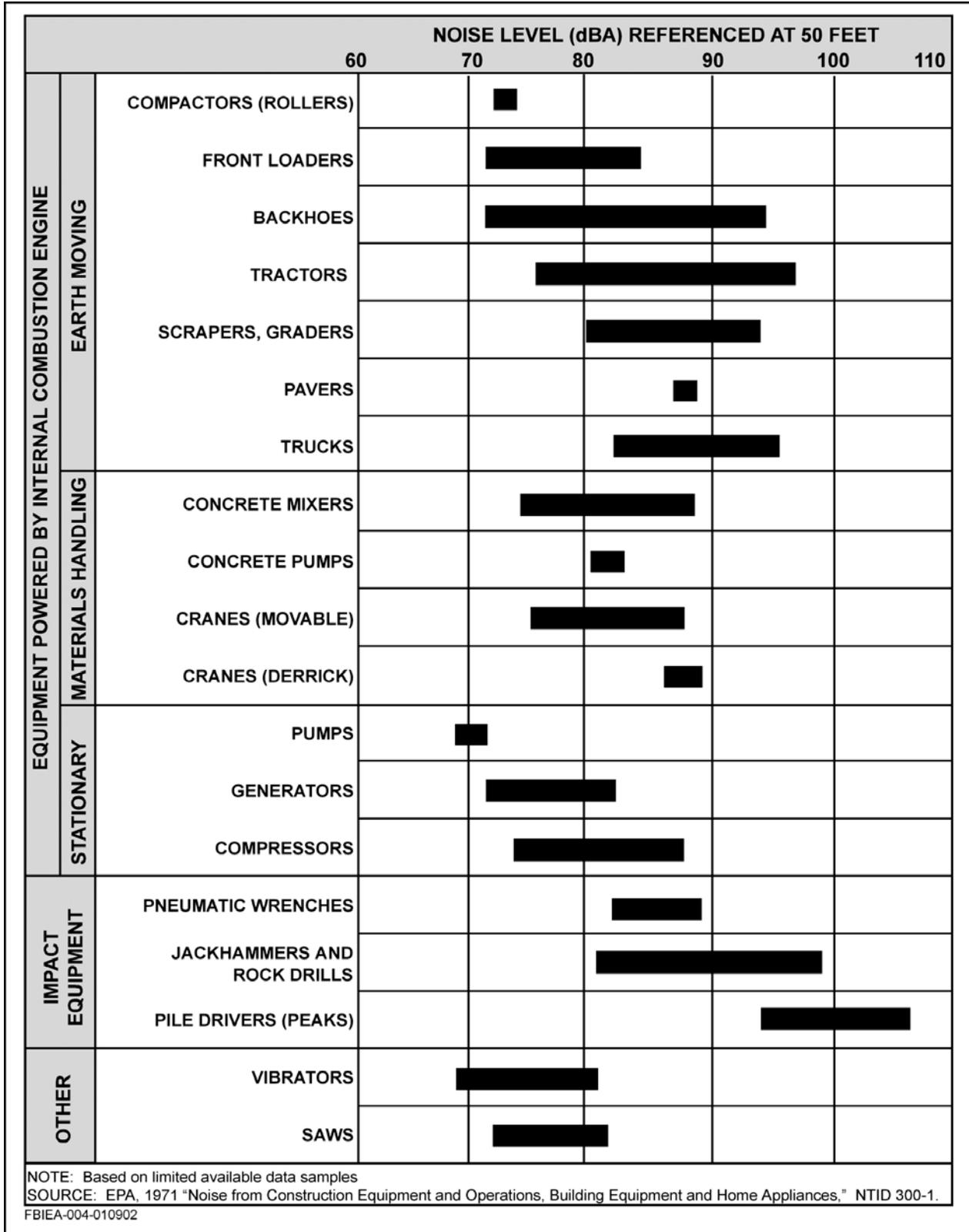


Figure 5.5-1. Typical Construction Equipment Noise Levels

Segment D of the Proposed Action crosses two streams as depicted on Figure 5.6-1. The Proposed Action was designed to avoid impacting streams. Segment D cable will be installed via directional drilling under the stream beds along Simonds Street and York Avenue to avoid disturbing surface water resources. Therefore, no impacts are expected to surface waters from the Proposed Action.

#### 5.6.1.3 Stormwater

Installation of the cable upgrade would disturb over 5,000 ft<sup>2</sup> of soils, add to an existing stockpile for excess clean fill and dried clay slurry, and use an existing pit for dewatering spent bentonite slurry. These activities would require that the Project Proponent prepare an ESCP, a SWMP waiver, and comply with FGGM's SWPPP. Disposal of clean fill and spent-bentonite slurry has been coordinated with FGGM DPW. The materials would be placed on MDE permitted stockpiles at FGGM for potential future use. Spent clay slurry would be dewatered as described in Section 2.0 and mixed into the stockpile. The stockpile and dewatering area would be maintained according to BMPs, the ESCP, SWMP waiver, and FGGM's SWPPP and in consultation with FGGM DPW (FGGM 2013a).

Constructing the Proposed Action as per the ESCP, SWMP waiver, and FGGM's SWPPP would prevent erosion and stormwater runoff from creating adverse impacts to the maximum extent possible. The Project Proponent would obtain a MDE approved ESCP and a SWMP waiver. BMPs outlined in the ESCP and FGGM's SWPPP would be implemented to prevent any adverse impacts from stormwater runoff.

### 5.6.2 No Action Alternative

#### 5.6.2.1 Groundwater

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be completed. Therefore, there would be no impacts to groundwater.

#### 5.6.2.2 Surface Water

Under the No Action Alternative, the I3MP upgrade would not be completed. Therefore, there would be no impacts to surface water.

#### 5.6.2.3 Stormwater

Under the No Action Alternative, the I3MP upgrade would not be completed. Therefore, there would be no impacts to stormwater management.

## 5.7 Floodplains

### 5.7.1 Proposed Action

According to FEMA Map Panels 24003C0126E and 24003C0128E, portions of the Proposed Action are located within the 1% annual chance flood hazard area (100-year floodplain) and the 0.2% annual chance flood hazard area (500-year floodplain) of Midway Branch and Franklin Branch (Figure 5.7-1) (FEMA 2012). Portions of Segment D are within the 100- and 500- year floodplains of Midway Branch, portions of Segment O are within the 500-year floodplains of Midway Branch, the majority of Segment C is within the 100- and 500-year floodplains of Franklin Branch, and portions of Segment L are within the 100- and 500- year floodplains of Franklin Branch.

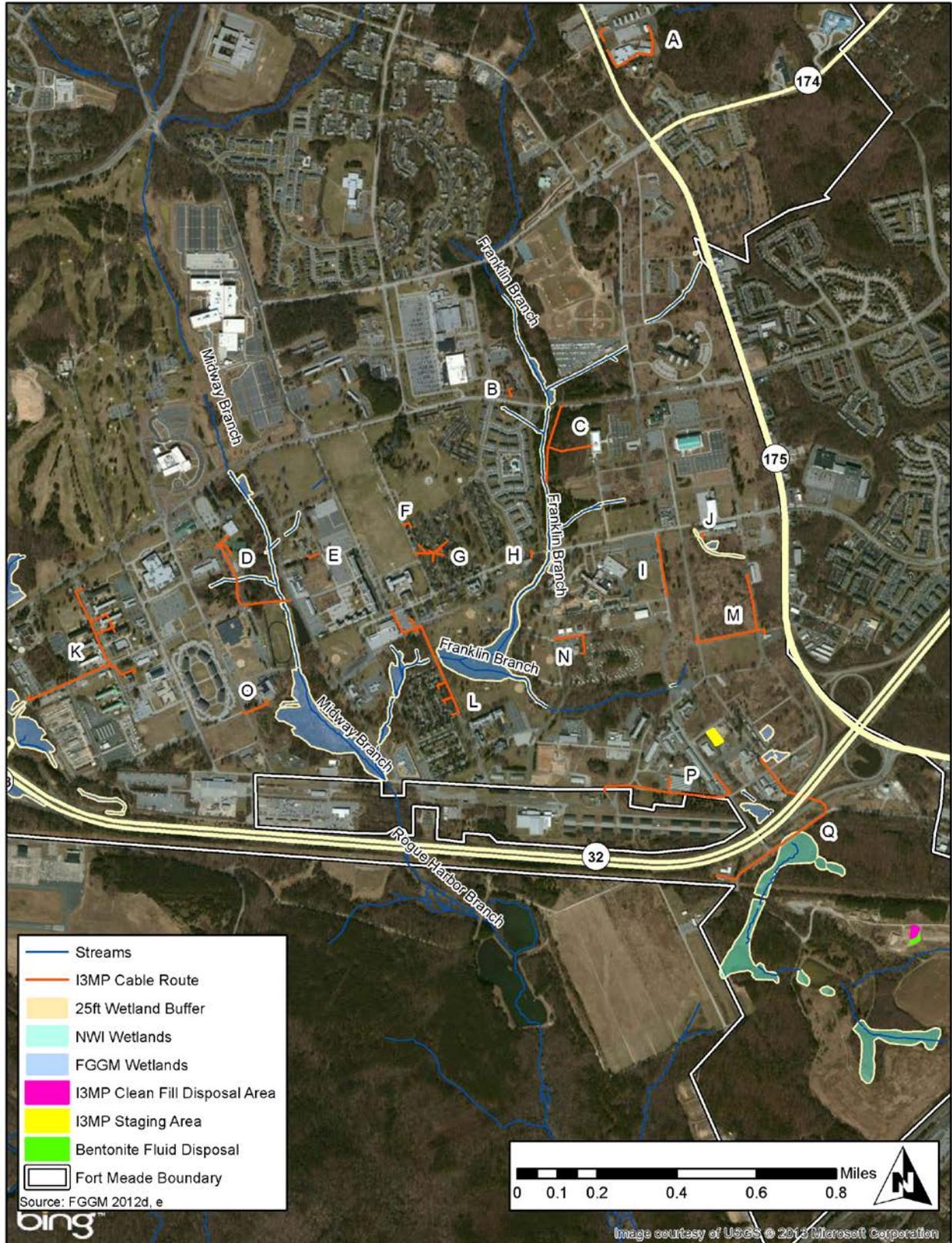


Figure 5.6-1. Surface Waters, Wetlands, and I3MP Cable Layout within the Proposed I3MP Project Area

The Proposed Action has been calculated to impact approximately 18,337 ft<sup>2</sup> of 100-year floodplains (a corridor of 1,242 linear ft). However, the project has been designed to minimize or avoid impacts to floodplains wherever possible. The cable in Segment D would be installed through the existing street, and the cable in Segment L is being installed through the existing sidewalk. Short-term, minor, adverse impacts could occur to undeveloped portions of the floodplains as a result of construction equipment and excavation during the installation period. However, all the proposed cable upgrades would be placed underground, and the ground surface would be restored to pre-construction conditions. In order to minimize impacts to the floodplains, no materials or equipment would be stored in the floodplain during anticipated flood conditions. The Project Proponent would obtain all necessary permits prior to the start of construction and implement required BMPs to prevent any adverse impacts to floodplains.

#### 5.7.2 No Action Alternative

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. Therefore, there would be no impacts to floodplains.

### 5.8 Wetlands

#### 5.8.1 Proposed Action

The Proposed Action has been designed to avoid impacts to any existing wetlands. Figure 5.6-1 shows the locations of the cable installation route relative to mapped wetland resources. A field meeting was conducted on February 13, 2013 by representatives of the Project Proponent, USACE, and MDE. Analysis of FGGM field delineated wetland data and observations from the February 13, 2013 field meeting determined that there would be no anticipated wetland impacts (FGGM 2012e; FGGM 2013d). An appropriate ESCP would be developed and all federal and state regulations, FGGM's SWPPP, and a SWMP waiver would be followed during cable installation, as necessary.

#### 5.8.2 No Action Alternative

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. Therefore, there would be no impacts to wetlands.

### 5.9 Coastal Zone Management

#### 5.9.1 Proposed Action

All proposed utility upgrades would be conducted in accordance with applicable local, state, and federal requirements. The utility upgrades would not increase impervious surfaces. The Project Proponent would obtain a MDE approved ESCP, a SWMP waiver, and comply with FGGM's SWPPP. BMPs during ground disturbing activities would be implemented as required to prevent adverse impacts associated with stormwater runoff and water quality. No changes to existing levels of stormwater runoff and water quality would be expected.

Impacts to the riparian buffer, floodplains, and wetlands would be avoided or minimized (See Sections 5.6 *Water Resources*, 5.7 *Floodplains*, and 5.8 *Wetlands*). To abide by the policies set forth within the

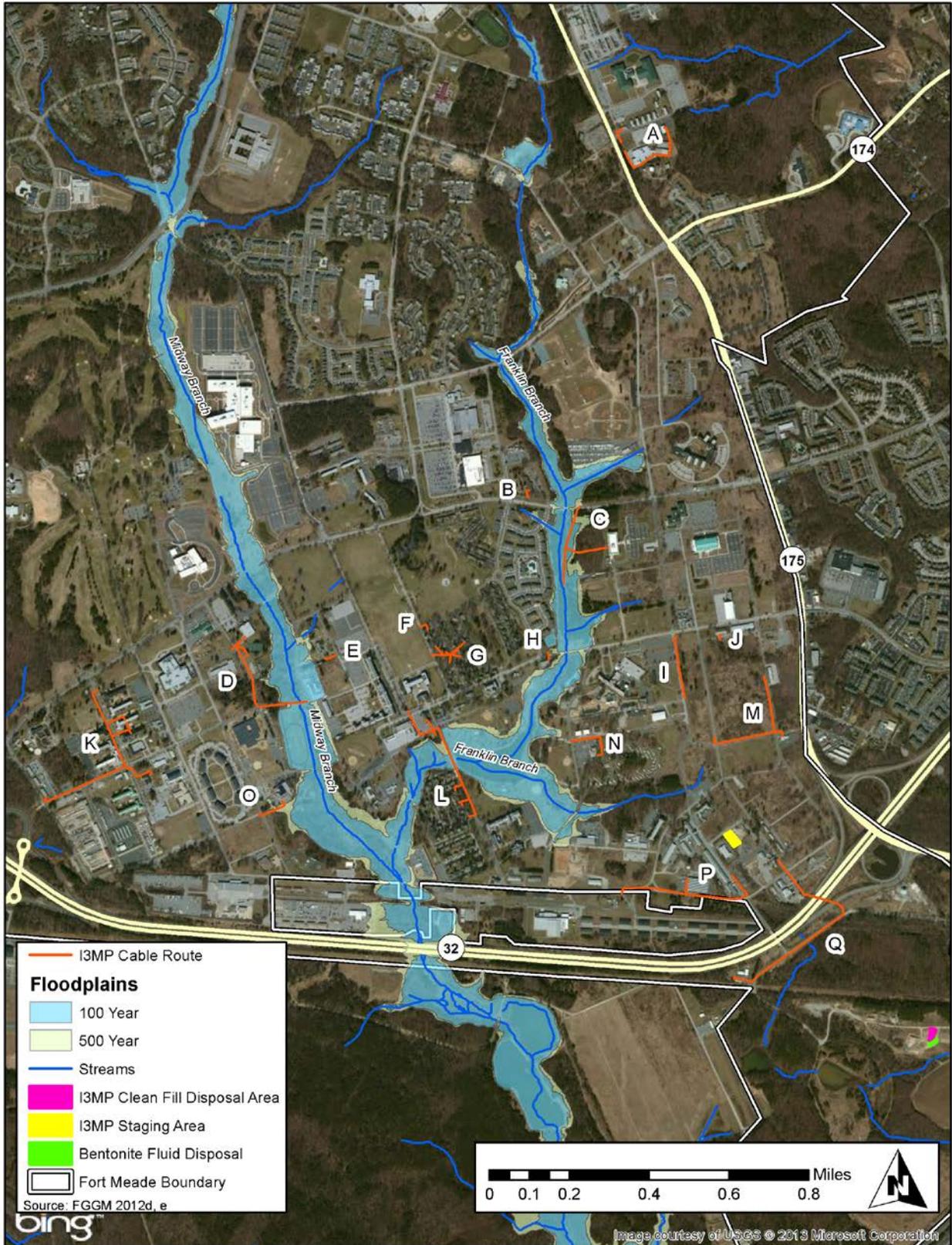


Figure 5.7-1. Floodplains and I3MP Cable Layout within the Proposed I3MP Project Area

Maryland Coastal Zone Program, a Federal Consistency Determination is included in Appendix C. The analysis shows that impacts to wetlands are being avoided and impacts to floodplains and forested areas are being minimized and preserved to the maximum extent possible. Therefore, the Proposed Action would be consistent to the maximum extent practicable with the enforceable policies of the Maryland Coastal Zone Management Program and would not result in significant impacts to Maryland's coastal zone and natural resources.

#### **5.9.2 No Action Alternative**

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. Therefore, there would be no impacts to coastal zones.

### **5.10 Biological Resources**

#### **5.10.1 Proposed Action**

##### **5.10.1.1 Vegetation**

Healthy landscape and street trees would be preserved to the extent possible. Specimen trees would also be preserved. Practices such as root pruning, protective fencing, and trunk protection would be implemented during cable installation to minimize disturbing established street and landscape trees. Trees that cannot be preserved may potentially be transplanted to another appropriate site. A certified arborist (in accordance with American National Standards Institute requirements) would perform pruning and tree preservation measures. When impacts are unavoidable, landscape and street tree losses would be replaced at a minimum of a 1:1 ratio, with species preference given to specimen trees (FGGM 2012c).

Projects greater than 40,000 square feet must comply with FGGM's Forest Conservation Act and Tree Management Policy. To comply with this policy, the Proposed Action would be required to preserve or establish 20% of the forest cover removed for the project. If forested tracts cannot be avoided, native plants would be used for reforestation. Street trees must be replaced at a minimum of a 1:1 ratio, with preference to selecting specimen tree species as replacements. Specimen tree replacement ratios would be calculated on a case by case basis. If reforestation is not feasible in the project areas, afforestation in other designated areas within FGGM would be performed. Specimen trees (trees having a diameter measured at 4.5 ft above ground of 30 inches or more) would be avoided and preserved. Native species would be used in all plantings, and invasive species would be controlled and removed when necessary (FGGM 2012c).

In order to minimize impacts to forested areas, the Proposed Action has been designed to reduce forest fragmentation and introduction of edge-habitat; however, one segment (Segment C) passes through a forested area. Segment C would be primarily contained in an existing utility right of way that is within a larger forested area. Any forest impacts would be mitigated as described above. Reforestation would occur at the site of disturbance whenever possible. The fair market value of forest products removed during cable installation would be reimbursed to the Army's Forestry Account by the contractor (FGGM 2012c).

The remaining segments of the Proposed Action would primarily be installed in paved roads and sidewalks, through lawn and landscaped areas, through existing utility easements, and other areas that have been previously disturbed. During the installation phase of the project minor alignment revisions would be made to minimize impacts to vegetation wherever possible. Short-term, minor, adverse impacts could occur as a result of construction equipment and excavation during the installation period. All the proposed utility upgrades would be placed underground; the surface would be restored to pre-construction conditions, and vegetated with an approved native species mix. BMPs would be followed in order to remove existing invasive species, and to reduce the introduction of invasive species to disturbed habitats (FGGM 2012c).

#### 5.10.1.2 Wildlife Resources

Proposed installation would primarily occur within areas that have been previously disturbed and are actively managed (i.e., mowed or landscaped). Project activities would result in short-term increases in noise levels within project areas temporarily displacing wildlife and migratory birds from the immediate area. However, potential effect is lessened as wildlife in the area, including migratory birds, has adapted to a developed, urban setting and would be less likely to be affected by short-term noise associated with the Proposed Action. Forest fragmentation has been avoided to the extent possible, as described above, in order to protect the habitat of Forest Interior Dwelling Birds. Due to their habituation to relatively high ambient noise levels, the limited areas of suitable habitat that would be impacted by proposed utility upgrade activities, and the short-term nature of the disturbance, wildlife and migratory birds would not be significantly impacted from the Proposed Action.

### 5.10.2 No Action Alternative

#### 5.10.2.1 Vegetation

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. Therefore, there would be no impacts to vegetation.

#### 5.10.2.2 Wildlife Resources

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. Therefore, there would be no impacts to wildlife resources.

### 5.11 Threatened and Endangered Species

#### 5.11.1 Proposed Action

There are no federally listed or proposed endangered and threatened species, or designated critical habitats, known to occur on FGGM. No impacts to state-listed species are anticipated. No occurrences of these species were documented during rare, threatened, and endangered habitat surveys conducted by Eco-Science Professionals, Inc. (2001) and USACE (2009).

### **5.11.2 No Action Alternative**

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. Therefore, there would be no impacts to threatened and endangered species.

## **5.12 Cultural Resources**

### **5.12.1 Proposed Action**

#### **5.12.1.1 Architectural Resources**

Under the Proposed Action, temporary effects to the Fort George G. Meade Historic District (AA-2095) and Llewellyn Avenue Bridge (AA-2366) may occur in the form of removal of existing asphalt and roadways, opening of trenches, directional drilling, and the placement of underground fiber optic lines and PVC pipes. However, these temporary effects would occur in areas that are currently located under paved roads, asphalt roadways, and other previously disturbed areas. These areas would be returned to their current conditions following the completion of installation activities.

The Proposed Action includes coring through buildings to run the fiber-optic cable into them. Of the buildings where coring would occur, 13 are contributing resources of the Fort George C. Meade Historic District (AA-2095). They are Buildings 4302–4306, 4526, 4534–4536, 4544, 4546, 4547, and 4549. Coring would also be undertaken at Buildings 2018 and 8465, which are currently in the process of being evaluated for NRHP eligibility. The coring process would involve drilling a 4.5-inch diameter hole below ground, through the basement wall of each building to provide an entrance for the conduit. The cables would connect to a 2-ft-wide and 2-ft-tall cabinet mounted to an interior wall in the basement of each building. Because the conduit entrance would be underground and would comprise a very small area in the basement wall, the coring would not adversely affect the integrity of the contributing resources. The wall-mounted cabinets would be installed in basement utility closets or, in the case of housing, in basement laundry rooms, which are not significant interior spaces of the buildings. Therefore, there would be no adverse effects to any NRHP-eligible resources as a result of the Proposed Action.

#### **5.12.1.2 Archaeological Resources**

No NRHP-eligible or listed resources are located within the APE for archaeology. Therefore, no archaeological resources would be affected by the Proposed Action. In the event of an inadvertent discovery of archaeological materials during excavation or drilling a cable route, work shall immediately cease in the area of the discovery. The site is to be considered National Register of Historic Places eligible until a determination is made. Within 24 hours of the discovery the Contractor shall notify Fort George G. Meade's (FGGM) Cultural Resource Manager (CRM), Mr. Jerald Glodek in the DPW-ED, at (301) 677-9179. Federal archaeologists from the USACE, Baltimore District will assess the discovery and notify appropriate parties of the discovery within 72 hours, providing these parties an opportunity to assess the discovery. Based on these findings, the Fort Meade CRM will then follow the procedures outlined in the 2011 FGGM Integrated Cultural Resource Management Plan (USACE 2011).

### 5.12.2 No Action Alternative

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. The No Action Alternative would have no impact on architectural or archaeological resources.

## 5.13 Hazardous and Toxic Substances

### 5.13.1 Proposed Action

It is anticipated that the contractor completing the utility upgrades would be responsible for managing materials necessary for the completion of the project. Potential materials may include various epoxies and adhesives in their original containers used to connect and seal PVC conduit pipes, as well as fuels (e.g., diesel fuel, propane) and lubricants (e.g., engine/gear oil) for the operation and maintenance of power generators and heavy equipment (e.g., backhoes, forklifts). The contractor would be responsible for the safe and compliant management of hazardous materials it stores, uses, and otherwise handles during the course of the onsite work at FGGM, and furnishing all compliance and safety information as required by FGGM policy.

#### 5.13.1.1 Resource Conservation and Recovery Act

No RCRA-regulated hazardous wastes are known to be stored or buried in the proposed project area. Implementation of the Proposed Action is not expected to impact the current hazardous waste storage and handling practices in place at FGGM or the Installation's hazardous waste generator status. It is anticipated that some hazardous wastes, including universal wastes (e.g., batteries), would be generated by the contractor during the Proposed Action work activities. The contractor would be responsible for safely containerizing, managing, and arranging for the safe and legal disposal of any hazardous wastes generated as a result of the Proposed Action work activities. Given the presence of numerous hazardous waste Treatment, Storage, and Disposal Facilities (TSDFs) within the region, arranging for the safe and compliant transportation and off-site treatment or disposal of small quantities of hazardous waste generated by the Proposed Action activities is not expected to impact the capacity of the regional facilities to accept waste.

#### 5.13.1.2 Spill Prevention, Control, and Countermeasure Plan

No bulk fuels or oils are currently stored on the Proposed Action locations, and no oil pipelines are known to exist in the areas where subsurface trenching and utilities work would be conducted; therefore, implementation of the Proposed Action would have no effect on the current oil storage and handling practices in place at FGGM. Any oils, including fuels, brought to the Installation by the contractor would be managed in accordance with relevant and applicable federal, state, and local laws and regulations, DoD and Army policies, and the specific requirements of the FGGM SPCC Plan.

#### 5.13.1.3 Asbestos-Containing Materials and Lead-Based Paint

Table 5.13-1 presents buildings included in the Proposed Action for the I3MP upgrade that have been previously identified by FGGM as containing ACMs (i.e., asbestos surveys have been completed at the buildings). Adverse impacts from the Proposed Action resulting from potential disturbance of LBPs or ACMs are expected to be avoided, as pre-construction surveys in these buildings indicated that ACMs or

LBP were not present in work areas. However, if potential ACM is discovered during the course of work, the contractor would prepare an Asbestos Abatement Plan that will include the procedures for identifying, controlling, and disposing of ACMs in accordance with all state and federal regulations. If previously unidentified LBPs are encountered during the course of the project work, the contractor would be required to stop work and immediately notify the FGGM DPW-ED so that appropriate precautions could be put in place. The contractor would be required to develop a plan for the safe and appropriate handling of the materials.

**Table 5.13-1. Buildings Containing Asbestos included in the Proposed Action**

Building Number	Segment
393	J
1978	A
4407	H
4431	L
4463	N
4674	E
6330	O
8465	K
8543	K

#### 5.13.1.4 Installation Restoration Program

Several of the proposed project segments cross through or within 50 ft of sites identified or investigated under the FGGM IRP. Figure 5.13-1 illustrates the sites that the project will pass near or through, but for the purposes of clarity, only depicts sites in proximity of this project. Soils at or near Installation Restoration Program sites may be disturbed during construction. Disturbance resulting from trenching would occur above 3 feet below ground surface, where groundwater is not expected to be encountered. Directional drilling may extend further below ground surface. Direct contact with groundwater in the vicinity or down-gradient (southeast) of OU-4 would require appropriate personal protective equipment to be worn and air monitoring to be coordinated with FGGM's DPW-ED. Personal protective equipment may also be required for direct contact with soils within specific source areas of OU-4, which includes FGGM 47, FGGM 88, FGGM 90, and FGGM 96, as depicted on Figure 5.13-1.

Prior to initiating intrusive activities at FGGM, the contractor would be required to obtain dig permits through the FGGM DPW in accordance with the established procedures and requirements for intrusive work. The FGGM DPW-ED would coordinate with the contractor, through the dig permit application and approval process, to ensure that activities are designed, planned, and executed in accordance with IRP and CERCLA requirements, including but not limited to established land use, administrative, and engineering controls and to ensure that existing contamination is not transported to other areas or other environmental media (e.g., from soil to groundwater or surface water) as a result of the contractor work activities.

#### 5.13.1.5 Military Munitions Response Program

Two sites are identified by FGGM as being actively managed under the MMRP: Inactive Landfill No. 2 and the Former Mortar Range (FGGM 2012h). None of the project areas are located within the boundaries of either of the MMRP sites; therefore, the Proposed Action would not affect the MMRP sites.

### **5.13.2 No Action Alternative**

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. Therefore, there would be no impacts to with regard to hazardous and toxic substances.

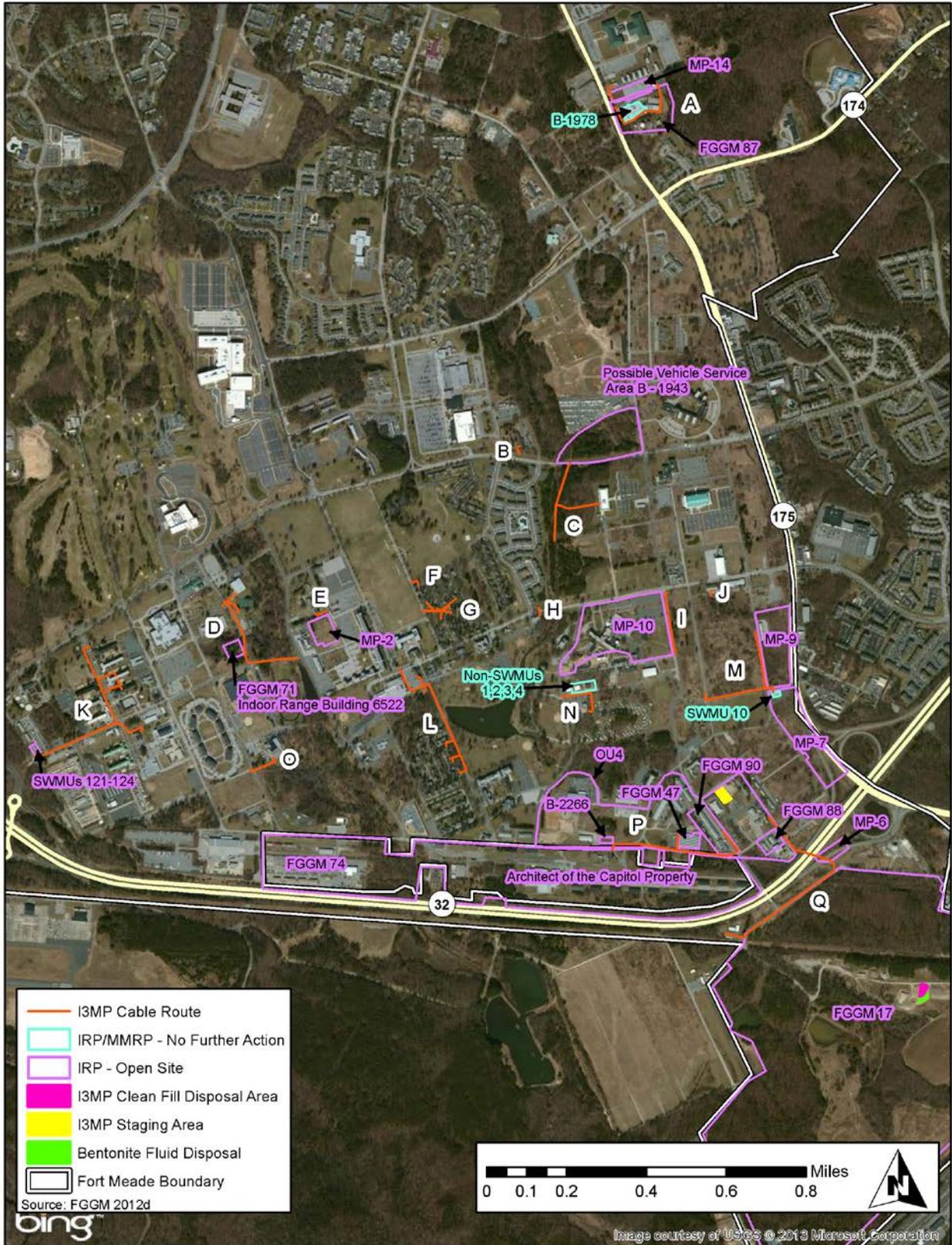


Figure 5.13-1. IRP and MMRP Sites and I3MP Cable Layout within the Proposed I3MP Project Area

## 5.14 Utilities

### 5.14.1 Proposed Action

#### 5.14.1.1 Potable Water

The Proposed Action does not include any new water facilities and does not require any modifications to the existing potable water service. As with any construction site, digging has some potential for damaging underground utilities. Therefore, all trenching and directional drilling activities associated with the Proposed Action would require a dig permit application be submitted to FGGM DPW and coordination with Miss Utility at 1-800-257-7777 prior to initiating any digging activities.

It is anticipated that the only potential impacts associated with the Proposed Action would be the result of hitting a buried water line. Proper planning should minimize the likelihood of any such occurrences, but if any damage should occur during digging, impacts are anticipated to be minor and short-term. It is anticipated that there would be no long-term impacts associated with operations as a result of the implementation of the proposed work.

#### 5.14.1.2 Domestic and Industrial Wastewater

The Proposed Action does not include any new facilities and does not require any modifications to the existing wastewater collection service. As with any construction site, digging has some potential for damaging underground utilities. Therefore, all trenching and directional drilling activities associated with the Proposed Action would require a dig permit application to be submitted to FGGM DPW and coordination with Miss Utility at 1-800-257-7777 prior to initiating any digging activities.

It is anticipated that the only potential impacts associated with the Proposed Action would be the result of hitting a buried wastewater collection line. Proper planning should minimize the likelihood any such occurrences, but if any damage should occur during digging, impacts are anticipated to be minor and short-term. It is anticipated that there would be no long-term impacts associated with operations as a result of the implementation of the proposed work.

#### 5.14.1.3 Communications

The Proposed Action would provide a beneficial impact to communications at Fort Meade. The Proposed Action would modernize the OSP telecommunications infrastructure not addressed by previous upgrades. The I3MP cable upgrades would provide the fiber optic architecture to enable robust network reliability, to the standard that throughput unified capabilities require. Network unified capabilities enables strategic, tactical, classified, and multinational missions with a broad range of interoperable and secure capabilities for converged non-assured and assured voice, video, and data services from the end device, through LANs, and across the backbone networks. The addition of the I3MP OSP infrastructure would provide this capability by deploying the fiber optic connectivity in a mess network with multiple paths.

#### 5.14.1.4 Electric and Gas at Fort Meade

The Proposed Action does not include any new facilities and does not require any modifications to the existing electric and gas service. As with any construction site, digging has some potential for damaging underground utilities. Therefore, all trenching and directional drilling activities associated with the

Proposed Action would require a dig permit application to be submitted to FGGM DPW and coordination with Miss Utility at 1-800-257-7777 prior to initiating any digging activities.

It is anticipated that the only potential impacts associated with the Proposed Action would be the result of hitting a buried electrical conduit or gas line. Proper planning should minimize the likelihood of any such occurrences; however, if any damages should occur during digging, impacts are anticipated to be minor and short-term. It is anticipated that there would be no long-term impacts associated with operations as a result of the implementation of the proposed work.

#### **5.14.2 No Action Alternative**

##### **5.14.2.1 Potable Water**

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. Therefore, there would be no impacts to potable water service within FGGM.

##### **5.14.2.2 Domestic and Industrial Wastewater**

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. Therefore, there would be no impacts to domestic and wastewater service within FGGM.

##### **5.14.2.3 Communications**

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. The No Action Alternative would likely result in deteriorating communications. FGGM would not have the robust interoperable infrastructure providing the connectivity and computing capabilities that allow FGGM and mission partners to access, share, and act on the information needed to accomplish their missions.

##### **5.14.2.4 Electric and Gas at Fort Meade**

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. Therefore, there would be no impacts to electric and gas service within FGGM.

#### **5.15 Solid Waste and Recyclable Management**

##### **5.15.1 Proposed Action**

The Proposed Action consists primarily of soil excavation with minimal demolition or construction debris being generated. The contractor performing the cable installation has contracted with a private company to manage and remove solid waste. The contractor would also comply with FGGM's EMS recycling goals and procedures, to the maximum extent possible. Therefore, there would be no impact on the current waste management capacity or procedures in place at FGGM.

**5.15.2 No Action Alternative**

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. Therefore, there would be no impacts to solid waste and recycling within FGGM.

**5.16 Transportation**

**5.16.1 Proposed Action**

The Proposed Action would include a combination of trenching and directional boring for the installation of the cable and conduits. The Proposed Action would require trenching across or directional boring under some roadways within FGGM boundaries, and directional boring across Maryland Route 32. Trenching methods are typically proposed between the buildings and the nearby manholes and hand holes, but are also proposed as the construction method along some of the smaller streets. To avoid disruption of the larger roadways, such as Maryland Route 32, entrance and exit pits would be excavated on both sides of the crossing and the conduit and cables would be installed using a directional boring method. Table 5.16-1 presents the specific Segments, roads crossed, and the installation methods used at the crossing. With the exception of Maryland Route 32, all roads to be crossed by the Proposed Action are within FGGM. The directional boring under Maryland Route 32 has been coordinated with State Highway Administration (SHA) and received a Utility Permit for performing the drilling under Maryland Route 32 (Permit number SHA-5-AA-3616-13).

**Table 5.16-1. Proposed I3MP Road Crossings**

Segment	Road	Installation Method
D	York Ave.	Trench
K	6 <sup>th</sup> Armored Calvary Road	Directional boring
F	Upton Avenue	Directional boring
G	Eskridge Avenue	Trench
	Croft Place	Directional boring
L	Llewellyn Avenue	Directional boring
C	Mapes Road	Directional boring
H	Llewellyn Avenue	Trench
J	6th Armored Calvary Road	Trench
M	Chisholm Avenue	Trench
	Chamberlin Avenue	Trench
P	Pepper road	Trench
Q*	Maryland Route 32	Directional boring

Note: \* Directional drilling under Maryland Route 32 for Segment Q has received an SHA Utility Permit.

The segments installed by directional boring methods would have negligible impacts on transportation during installation as there would be no associated road closures. The excavation for the entrance and exit pits may require additional personnel and vehicles and may create a distraction to drivers, but any impacts would be short-term and would not be significant.

The segments that include trenching along or across the smaller streets within the Installation may have some short-term, minor impacts, such as brief closures or an increase in the volume of construction equipment and personnel around the segments identified in Figure 2.0-1.

All impacts to transportation associated with the Proposed Action are anticipated to be minor. With the exception of Segment Q crossing Maryland Route 32, all roads involved in the Proposed Action are located within FGGM. Directional drilling under Maryland Route 32 associated with Segment Q has been coordinated through the SHA Utility permitting process. Therefore, all anticipated impacts are expected to be short-term and within FGGM boundaries. It is anticipated that there would no long-term impacts associated with operations as a result of the implementation of the proposed work.

#### 5.16.2 No Action Alternative

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. Therefore, there would be no impacts to transportation.

### 5.17 Socioeconomics, Environmental Justice, and Protection of Children

#### 5.17.1 Proposed Action

The project is expected to have short-term minor benefits to the area's socioeconomic conditions. Short-term benefits would result from construction expenditures and employment, which would last only for the duration of the installation. No long-term impacts would be anticipated from this project.

Implementation of the Proposed Action would not be expected to impact any demographic group working or living in the economic ROI. There would be no disproportionately high and adverse human health or environmental impacts to minority and low-income populations at FGGM or in the surrounding community.

The Proposed Action would not have disproportionate environmental health and safety risks to children. The Proposed Action would be carried out in areas where few or no children reside or visit. In all cases, proper precautions including the placement of fencing or other types of barriers would be used to prevent potential harm to all civilians, including children.

#### 5.17.2 No Action Alternative

Under the No Action Alternative, the existing information structure would remain in place at FGGM and the I3MP utility upgrades would not be executed. Therefore, there would be no impact on the ROI's socioeconomic conditions, environmental justice populations, or children's environmental health and safety.

### 5.18 Cumulative Effects

Cumulative impacts are defined by the CEQ in 40 CFR §1508.7 as:

The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.

The CEQ regulations further require that NEPA environmental analyses address connected, cumulative, and similar actions in the same document (40 CFR §1508.25).

Additionally, the CEQ further explained in “Considering Cumulative Effects under the NEPA Act” that “each resource, ecosystem and human community must be analyzed in terms of its ability to accommodate additional effects, based on its own time and space parameters.” Therefore, a cumulative effects analysis normally will encompass geographic boundaries beyond the immediate area of the Proposed Action, and a time frame, including past actions and foreseeable future actions, in order to capture these additional effects.

This section describes past, present, and reasonably foreseeable future actions relevant to cumulative impacts, analyzes the incremental interaction the Proposed Action may have with other actions, and evaluates cumulative impacts potentially resulting from these interactions.

#### **5.18.1 Past, Present and Reasonably Foreseeable Future Actions**

This section identifies past, present, and reasonably foreseeable future actions not related to the Proposed Action that have the potential to cumulatively impact the resources in the affected environment. An overview of these actions is presented to emphasize components of the activities that are relevant to the impact analyses. Geographic distribution, intensity, duration, and historical effects of similar activities were considered when determining whether a particular activity may contribute cumulatively and significantly to the impacts of the Proposed Action on the resources identified in the EA. Table 5.18-1 lists the projects assessed in this section, as well as any NEPA or environmental analysis that has been prepared or is anticipated to occur.

#### **5.18.2 Cumulative Impact Analysis for the Proposed Action**

This section analyzes the incremental interaction the Proposed Action may have with the actions described above in Table 5.18-1 and evaluates the cumulative impacts potentially resulting from these interactions. Table 5.18-2 summarizes the potential impacts from the development projects. Rare, threatened, and endangered species are not present on FGGM, and therefore will not contribute to cumulative impacts and are not analyzed further.

**Table 5.18-1. Other Actions Relevant to Cumulative Impact Analysis**

Project	Description	NEPA Documentation
<b>Current</b>		
East Campus/ Golf Course Development	An intelligence operations facility is being constructed on "Site M" property in FGGM. Facility is 1.8 million ft <sup>2</sup> and contains housing for 6,500 personnel, including a data center and administrative operations.	EIS
Asymmetric Warfare Group (AWG) Compound and Motor Pool Site	A new Asymmetric Warfare Group compound is being constructed. The main compound is on a 46-acre parcel of land on FGGM and an associated building on an adjacent 4-acre parcel. Operations at the compound would include a motor pool/ vehicle maintenance facility, storage, and administrative and operational activities.	EA/ FNSI
BGE Substation	An electrical substation and associated infrastructure is being constructed on approximately, 22 acres of undeveloped land and forest would be disturbed. Construction is intended to support projected demand.	EA
Army and Air Force Exchange Services (AAFES)	The existing Army and Air Force Exchange Services shopping center at MacArthur Road and Reece Road was demolished. A new 169,000 ft <sup>2</sup> shopping center is being constructed at the site of the former shopping center and its parking lot.	REC
Widening of Maryland Route 175	Widening of Maryland Route 175 between Maryland Route 170 and the Baltimore Washington Parkway. Improvements include bicycle and pedestrian crossing/ access as appropriate. Project is part of the Base Realignment and Closure program to address local road congestion and improve access to FGGM.	EA/ FNSI
Water and Wastewater Systems Improvements Projects	Project to repair, rehabilitate and upgrade water and wastewater systems at FGGM, including upgrades to the wastewater treatment plant and construction of a 6,000 ft <sup>2</sup> operations center.	EA
<b>Future</b>		
Mini Child Development Center	Proposed construction of a 4,460 ft <sup>2</sup> child development center. Capabilities would include providing 24-hour care for up to 20 children at a time, including providing respite, crisis, and overnight childcare services for children of wounded soldiers and after hours care for children of shift workers. The center would be located near the new proposed Sensitive Compartmented Information Facility.	REC
Defense Information School (DINFOS) Renovation and Expansion	Renovation of existing DINFOS Building (Building 6500). Addition would be multiple stories totaling 60,273 ft <sup>2</sup> . Anticipated land disturbance is less than 5 acres.	REC
Howard County Water Reclamation Project	Proposed project to develop a water reclamation system for cooling towers located on NSA's East and Main Campuses. Project is a partnership between NSA and Howard County Department of Public Works. The proposed construction would disturb approximately 14.5 acres of land.	EA

Notes: EA = Environmental Assessment; EIS = Environmental Impact Statement; REC = Record of Environmental Consideration; FNSI = Finding of No Significant Impact

**Table 5.18-2. Potential Short or Long-Term Adverse Impacts of Past, Present, and Future Projects on Resources**

Proposed Project	Land Use	Visual and Aesthetic Value	Geology and Soils	Air Quality	Noise	Water Resources (Groundwater, Surface Water, Stormwater)	Floodplains	Wetlands	Coastal Zone Management Act	Biological Resources (Vegetation, Wildlife)	Cultural Resources	Hazardous and Toxic Substances	Utilities	Solid Waste and Recyclable Management	Transportation	Socioeconomics, Environmental Justice, and Protection of Children
East Campus/ Golf Course Development	X	X	X	X	X	X		X		X		X	X		X	X
Asymmetric Warfare Group (AWG) Compound and Motor Pool Site	X			X	X							X				
BGE Substation	X			X	X			X		X						X
Army and Air Force Exchange Services (AAFES)				X	X											
Widening of Maryland Route 175					X	X		X		X						
Water and Wastewater Systems Improvements Projects		X	X	X	X	X	X	X		X					X	
Mini Child Development Center	X			X	X											
Defense Information School (DINFOS) Renovation and Expansion	X			X	X								X			
Howard County Water Reclamation Project		X	X	X	X	X		X		X			X		X	X

#### 5.18.2.1 Land Use

Although construction of some of the projects identified in Table 5.18-1 may have impacts to land use, the Proposed Action does not. Therefore, the Proposed Action would not contribute to cumulative impacts to land use when assessed in conjunction with past, present, and reasonably foreseeable future projects.

#### 5.18.2.2 Visual and Aesthetic Value

Projects listed in Table 5.18-2 such as the East Campus Development include larger structures that would be built on previously undeveloped areas, and may contribute to changes in the overall viewshed. The Proposed Action would be contained underground and is not anticipated to create permanent impacts to visual or aesthetic resources at FGGM as the I3MP utility upgrades would be installed underground. Short-term adverse impacts to visual and aesthetic resources may occur from equipment during installation. However, the Proposed Action would not result in permanent impacts to the viewshed. When past, present, and reasonably foreseeable future actions that have the potential to interact with the Proposed Action are analyzed together, the Proposed Action would not contribute to cumulative impacts to visual resources and aesthetics.

#### 5.18.2.3 Geology and Soils

The projects identified in Table 5.18-1 primarily consist of renovation and construction projects. Proposed projects such as construction of the new AAFES and renovation of the DINFOS may minimize soil disturbance by utilizing existing sites. Other projects, such as the East Campus Development would disturb larger areas of soils. It is anticipated that all proposed projects would develop ESCPs and implement BMPs to minimize any adverse impacts. The Proposed Action would result in temporary and localized impacts to soils around the proposed I3MP project areas. Implementation of stabilization and erosion control BMPs as per the ESCP, SWMP waiver, and FGGM's SWPPP would minimize the risk of the temporary adverse impacts. Therefore, the Proposed Action is not expected to result in increased cumulative impacts when combined with past, present and reasonably foreseeable future projects.

#### 5.18.2.4 Air Quality

The cumulative impact of the Proposed Action on the global climate in conjunction with other past, present, and reasonably foreseeable future actions is not currently scientifically predictable. Emissions of GHGs from the Proposed Action alone would not cause appreciable global warming that would lead to climate changes. However, these emissions would increase the atmosphere's concentration of GHGs, and, in combination with other past, present and reasonably foreseeable future project emissions from all other sources, contribute incrementally to the global warming that produces the adverse effects of climate change. At present, no methodology exists that would enable estimating the specific impacts (if any) that this increment of warming would produce locally or globally.

The projects listed in Table 5.18-1 are primarily construction projects that would utilize construction equipment and would emit minor amounts of HAPs. Additionally, these projects would also have increased releases of diesel exhaust organic gases and particulates from construction equipment. The operation of the diesel-powered equipment should include some BMPs, to include a restriction on excessive idling, adherence to equipment maintenance programs to ensure excessive emissions are not generated as a result of poor maintenance, and the use of particulate filters and ultra-low sulfur diesel

fuel for applicable equipment. The Proposed Action would not contribute to permanent cumulative impacts to air quality, when assessed in conjunction with past, present and reasonably foreseeable future projects.

#### 5.18.2.5 Noise

All of the projects listed in Table 5.18-1 would have temporary effects to noise levels due to construction activities. Projects with linear components such as the BGE substation and Water and Wastewater Systems would have noise impacts similar to the Proposed Action, with disturbances being transient and intermittent. Large-scale construction projects such as the AAFES construction and AWG Compound would have more concentrated noise impacts.

Although there is potential for noise from the Proposed Action to combine with noise from concurrent projects listed in Table 5.18-1 and produce temporary cumulative impacts, the Proposed Action would not contribute to permanent cumulative noise impacts when assessed in conjunction with past, present, and reasonably foreseeable future projects. Therefore, there would be no significant cumulative impacts associated with noise under the Proposed Action.

#### 5.18.2.6 Water Resources

The projects identified in Table 5.18-1 have the potential to impact surface water resources. Projects including the Widening of Maryland Route 175 and the Howard County Water Reclamation Project would be expected to have temporary and localized impacts to water quality as a result of sediment disturbance. However, to address these impacts, BMPs would be implemented and other minimization and mitigation measures developed through the MDE approved ESCP, a SWMP waiver, FGGM SWPPP, and floodplains permitting processes. The Proposed Action has the potential for temporary adverse impacts to surface waters as a result of the potential for increased sediment runoff. An ESCP would be prepared for the project and BMPs identified in the ESCP that would be followed during construction to minimize impacts. When analyzed in conjunction with past, present, and reasonably foreseeable future projects, the Proposed Action would not contribute to cumulative impacts to water resources.

The AWG Compound, East Campus development and the Mini Child Development Center identified in Table 5.18-2 would likely place increased demand on base groundwater supplies. The Water and Wastewater Systems Improvements are likely to increase efficiency of the FGGM water system and offset some of the increased demand. The Proposed Action would not impact ground water or have an increased demand on FGGM water systems. Therefore, the Proposed Action would not contribute to cumulative impacts to groundwater or water systems when assessed with past, present and reasonably foreseeable future projects.

#### 5.18.2.7 Floodplains

The Widening of Maryland Route 175 and Water and Wastewater Systems Improvement Projects listed in Table 5.18-1 may have adverse impacts to floodplains. The Proposed Action will create short-term, minor adverse impacts to floodplains. However, these effects are expected to be managed through Maryland's Nontidal Wetlands and Waterways permitting, and implementation of an approved ESCP, SWMP waiver, and BMPs described in FGGM's SWPPP. Therefore, when analyzed in conjunction with past, present, and reasonably foreseeable future projects, the Proposed Action would not contribute to cumulative impacts.

#### 5.18.2.8 Wetlands

Although construction of some of the projects identified in Table 5.18-1 may have impacts to wetlands, the Proposed Action does not. Therefore, the Proposed Action would not contribute to cumulative impacts to wetlands when assessed in conjunction with past, present, and reasonably foreseeable future projects.

#### 5.18.2.9 Coastal Zone Management

All of FGGM is within the Coastal Zone. The Proposed Action would not permanently affect any land, water, or natural resources related to Maryland's coastal zone. However, there is potential for cumulative temporary adverse impacts from concurrent construction projects. Implementation of BMPs and fulfilling the Federal Consistency Determination process are expected to minimize or mitigate effects. The Proposed Action is consistent with Maryland Coastal Zone Policies. When combined with past, present and reasonably foreseeable future projects, the Proposed Action would not contribute to cumulative impacts of coastal zone management.

#### 5.18.2.10 Biological Resources

Projects identified in Table 5.18-1 such as the BGE Substation, the Howard County Water Reclamation project, and the East Campus/ Golf Course Development would develop previously undisturbed or undeveloped areas of FGGM, thereby impacting biological resources. Implementation of the Proposed Action would occur primarily on paved or landscaped lawn areas, with minimal loss of trees, or would pass through a utility right-of-way in a forested area. To minimize impacts, the FGGM Forest Conservation Act and Tree Management Policy (FGGM 2009) as well as the project ESCP, SWMP waiver, and FGGM SWPPP would be followed for any impacts to forested areas, landscape, or street trees. The Proposed Action would have minor impacts to biological resources. When analyzed in conjunction with past, present, and reasonably foreseeable future projects, the Proposed Action would contribute to cumulative impacts to biological resources. However, these impacts are not anticipated to result in significant adverse cumulative impacts.

#### 5.18.2.11 Cultural Resources

No projects identified in Table 5.18-1 would adversely impact cultural resources. The Proposed Action is not expected to adversely impact any cultural resources. Therefore, the Proposed Action would not contribute to cumulative impacts on cultural resources when combined with past, present and reasonably foreseeable future projects.

#### 5.18.2.12 Hazardous and Toxic Substances

Projects identified in Table 5.18-2 such as the AWG Compound and Motor Pool Site and the East Campus/ Golf Course Development may impact management of hazardous and toxic substances. The Proposed Action may potentially disturb areas containing hazardous or toxic substances, as described in Section 5.13 of this document. Therefore, there is potential for cumulative impacts from concurrent construction projects. Potential impacts related to hazardous or toxic substances would be minimized and prevented through existing FGGM permitting protocols and policies at all construction sites.

#### 5.18.2.13 Utilities

Projects identified in Table 5.18-2 have both the potential to beneficially and adversely impact utilities. Projects such as the East Campus/ Golf Course Development that will house a significant number of new personnel may place increased demands on utility infrastructure. However, projects such as the BGE Substation and Water and Wastewater Systems Improvements Projects would increase utility capacity and efficiencies. The Proposed Action is expected to have beneficial impacts to the efficiency of telecommunications at FGGM. Therefore, when assessed with past, present and reasonably foreseeable future projects, the Proposed Action would contribute to cumulative beneficial impacts of utility and infrastructure upgrades.

#### 5.18.2.14 Solid Waste and Recyclable Management

No projects identified in Table 5.18-1 would impact current solid waste or recyclable management practices at FGGM. The Proposed Action is not expected to adversely impact solid waste or recyclable management. Therefore, the Proposed Action would not contribute to cumulative impacts on solid waste or recyclable management when combined with past, present and reasonably foreseeable future projects.

#### 5.18.2.15 Transportation

Some projects identified in Table 5.18-1 would have impacts to transportation: East Campus Development, Water and Wastewater Systems Upgrades, and the Howard County Water Reclamation Project. The Proposed Action is expected to temporarily impact traffic within FGGM and through permitted work under Maryland Route 32. The Proposed Action would not result in permanent impacts to transportation. Therefore, when analyzed in conjunction with past, present and reasonably foreseeable future actions, the Proposed Action would not contribute to cumulative impacts to transportation.

#### 5.18.2.16 Socioeconomics, Environmental Justice, and Protection of Children

Although some projects listed in Table 5.18-1 have impacts to socioeconomics, environmental justice, and/or children, the Proposed Action is expected to have short-term minor benefits to local socio-economic conditions, and no effect on demographic groups or children. Therefore, when analyzed in conjunction with past, present and reasonably foreseeable future projects, the Proposed Action would not contribute to cumulative adverse impacts to socioeconomics, environmental justice, and protection of children.

### 5.19 Unavoidable Adverse Impacts

Unavoidable adverse impacts (also referred to as residual impacts) are the effects that would still remain after mitigation measures have been applied. In some cases, unavoidable adverse impacts occur because there is no reasonable or effective mitigation to reduce the impact. In other cases, mitigation is not expected to be effective enough to reduce the level of impact to a low or negligible level. The primary unavoidable adverse impact on the environment resulting from implementation of the Proposed Action would be associated with the installation of the underground fiber optic cables. The installation would require construction equipment and would result in noise and dust and emissions. These impacts would be short-term and generally limited to the immediate vicinity. A total of 4.75 acres

of ground would be disturbed during installation, but would be restored to pre-construction conditions and vegetated with native seed mix. Trees would be replaced in accordance with the FGGM Forest Conservation Act and Tree Management Policy.

#### **5.20 Relationship Between Local Short-Term Uses of the Environment and Enhancement of Long-Term Productivity**

Short-term uses of the environment are those that occur over a period of less than the life of the Proposed Action. Long-term uses include those impacts that would persist for a period of 5 years or more, or for the life of the Proposed Action. The activities addressed in this EA that would be categorized as short-term include installation of a total of 4.45 miles of underground fiber optic cable conduit, 31 manholes, and three handholes. Installing the buried cable is expected to produce short-term adverse impacts to land use, visual resources, soils, air quality, noise, surface water, floodplains, stormwater management, wetlands, coastal zone, forested areas, and landscape trees.

From a long-term perspective, the Proposed Action would fulfill the goals as outlined in the DoD Information Enterprise Strategic Plan 2010-2012.

#### **5.21 Irreversible and Irrecoverable Commitments of Resources**

An irreversible or irretrievable commitment of resources is defined as impacts on or losses to resources that cannot be recovered or reversed. Hypothetical examples include permanent conversion of wetlands, or permanent loss of cultural resources, soils, wildlife, or agricultural production. Irreversible describes the loss of future options; it primarily applies to the effects of consuming nonrenewable resources such as minerals or cultural resources. Irrecoverable is a term that applies to the loss of production, harvest, or similar opportunities to use natural resources. For example, if farmland is used for a non-agricultural event, some or all of the agricultural production from an area of farm land is lost irretrievably while the area is temporarily used for another purpose. The production lost is irretrievable, but the action is not irreversible.

Irrecoverable commitment of resources relative to the Proposed Action may include use of fuel, construction materials, and labor expended during installation of the underground fiber optic cables. However, commitment of these resources would not be considered a significant. Moreover, the Proposed Action would not result in the destruction of environmental resources such that the range of potential uses of the environment would be limited, nor impact the biodiversity of the region.

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## 6.0 CONCLUSION

This EA evaluates the potential impacts of the proposed I3MP upgrades at FGGM. The Proposed Action consists of the upgrade and modernization of the voice network, ASLAN, data core, and outside and inside plant as part of the I3MP program effort to upgrade the information technology infrastructure. The I3MP upgrades would facilitate the transition to VOIP capabilities and are necessary to allow Fort Meade to optimize connectivity with other installations and deployed combat forces.

Installation of the cable upgrades would require placement of approximately 4.45 miles of underground conduits containing the cable, 31 manholes, and three handholes. The upgraded cable would be run into receiving buildings through a below-ground coring to the wall mounted cabinets installed in basement utility closets or laundry rooms, as applicable. A total of 4.75 acres of ground would be disturbed during installation, returned to pre-construction conditions, and vegetated with native seed mix. Trees would be replaced in accordance with FGGM's Forest Conservation Act and Tree Management Policy.

No permanent adverse impacts are expected to result from the Proposed Action or from the Proposed Action being implemented with other known projects at FGGM. Minor short-term adverse impacts are associated with installation activities occurring in limited areas of floodplains, forest, and landscape trees. These short-term adverse impacts are expected to be managed via ongoing agency coordination, permitting processes, and following FGGM management policies. Short-term adverse impacts associated with air quality and noise during cable installation are expected to be localized and temporary. Beneficial impacts from the Proposed Action to utilities are expected due to improved communications infrastructure. Required permits would include FGGM dig permits, a Maryland Department of Transportation Utility Permit for directional drilling under Maryland Route 32, a Maryland Nontidal Wetlands and Waterways permit for the temporary disturbance of floodplains, and an ESCP. Prior to the start of construction, all required permits or approvals would be obtained prior to any ground disturbance.

No I3MP cable upgrades would occur if the No Action Alternative were implemented. There would be no alteration to the existing conditions and no impacts to natural resources would be associated with this alternative. However, the No Action Alternative would likely result in deteriorating communications and disabling FGGM from maintaining its ability to communicate with deployed personnel and other installations.

The analysis of the environmental impacts of the Proposed Action indicates that there would be no significant adverse impacts.

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**APPENDIX A**

**AGENCY CORRESPONDENCE**

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

REPLY TO  
ATTENTION OF:

JAN 10 2013

Directorate of Public Works

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

Subject: Coordination regarding I3MP communications Infrastructure Upgrade Project, Fort George G. Meade, Anne Arundel County, Maryland

Dear Ms. Byrne:

The Department of the Army at Fort George G. Meade (FGGM) is preparing an Environmental Assessment (EA) for the proposed Installation Information Infrastructure Modernization Program (I3MP) utility upgrades. Implementation of this Proposed Action is required to modernize the information systems that are in place at the installation. With the upgraded information systems, FGGM would gain improved and reliable connectivity with other installations and deployed combat forces.

The Proposed Action to be evaluated in the EA consists of the installation of a total of 6.24 miles of underground fiber optic cable conduit and 34 concrete manholes/vaults that are part of the Voice Over Internet Protocol (VOIP) upgrade project. This I3MP project is located within the boundaries of FGGM, and the cable installation route is depicted in Figure 1. The Outside Plant (OSP) infrastructure would supply fiber optic cable connectivity to existing facilities. Installation of the OSP infrastructure would be accomplished using trenching and directional horizontal boring excavating methods. The OSP would be placed directly adjacent to roadways and other developed areas. The proposed project would not create any additional non-pervious structures or surfaces with ground surface restoration returned to its current state. An existing parking lot will be used as the equipment staging area and an existing stockpile/construction material disposal area will be used for disposal of clean fill and spent bentonite based drilling fluid. The staging area and bentonite/ fill disposal area are also depicted on Figure 1.

Pursuant to the Endangered Species Act (ESA) of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq). and the National Environmental Policy Act (NEPA), we are reviewing information regarding federally listed or proposed species and designated critical habitat that may be present in the project area.

To assist us in identifying issues that may affect the implementation of this project, please provide written comments within 30 days of receipt of this letter to: Suzanne Teague, Directorate of Public Works, Environmental Division, Attn: IMNE-PWE, 4215 Roberts Avenue, Fort Meade, Maryland, 20755-7068. If you have any questions, please contact Ms. Teague by phone at 301-677-9185 or by e-mail at [suzanne.m.teague.civ@mail.mil](mailto:suzanne.m.teague.civ@mail.mil).

Sincerely,



Enclosure: Figure 1 Project Location

Michael P. Butler  
Chief, Environmental Division



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

REPLY TO  
ATTENTION OF:

JAN 10 2013

Directorate of Public Works

Mr. William Arguto  
U.S. Environmental Protection Agency, Region III  
1650 Arch Street  
Philadelphia, PA 19103

Subject: Coordination regarding I3MP communications Infrastructure Upgrade Project, Fort George G. Meade, Anne Arundel County, Maryland

Dear Mr. Arguto:

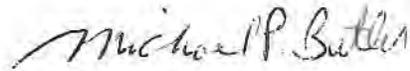
The Department of the Army at Fort George G. Meade (FGGM) is preparing an Environmental Assessment (EA) for the proposed Installation Information Infrastructure Modernization Program (I3MP) utility upgrades. Implementation of this Proposed Action is required to modernize the information systems that are in place at the installation. With the upgraded information systems, FGGM would gain improved and reliable connectivity with other installations and deployed combat forces.

The Proposed Action to be evaluated in the EA consists of the installation of a total of 6.24 miles of underground fiber optic cable conduit and 34 concrete manholes/vaults that are part of the Voice Over Internet Protocol (VOIP) upgrade project. This I3MP project is located within the boundaries of FGGM, and the cable installation route is depicted in Figure 1. The Outside Plant (OSP) infrastructure would supply fiber optic cable connectivity to existing facilities. Installation of the OSP infrastructure would be accomplished using trenching and directional horizontal boring excavation methods. The OSP would be placed directly adjacent to roadways and other developed areas. The proposed project would not create any additional non-pervious structures or surfaces with ground surface restoration returned to its current state. An existing parking lot will be used as the equipment staging area and an existing stockpile/construction material disposal area will be used for disposal of clean fill and spent bentonite based drilling fluid. The staging area and bentonite/ fill disposal area are also depicted on Figure 1.

To assist us in identifying issues that may affect the implementation of this project, please provide written comments within 30 days of receipt of this letter to: Suzanne Teague, Environmental Scientist, Directorate of Public Works, Environmental Division, Attn: IMNE-PWE, 4215 Roberts Avenue, Fort Meade, Maryland, 20755-7068.

If you have any question please contact Ms. Teague by phone at 301-677-9185 or by e-mail at [suzanne.m.teague.civ@mail.mil](mailto:suzanne.m.teague.civ@mail.mil).

Sincerely,

A handwritten signature in black ink that reads "Michael P. Butler". The signature is written in a cursive style with a large initial "M".

Enclosures: Figure 1 Project Location

Michael P. Butler  
Chief, Environmental Division



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

REPLY TO  
ATTENTION OF:

JAN 10 2013

Directorate of Public Works

Ms. Genevieve LaRouche  
Chesapeake Bay Field Office  
U.S. Department of the Interior Fish and Wildlife Service  
177 Admiral Cochrane Drive  
Annapolis, MD 21401

Subject: Coordination regarding I3MP communications Infrastructure Upgrade  
Project, Fort George G. Meade, Anne Arundel County, Maryland

Dear Ms. LaRouche:

The Department of the Army at Fort George G. Meade (FGGM) is preparing an Environmental Assessment (EA) for the proposed Installation Information Infrastructure Modernization Program (I3MP) utility upgrades. Implementation of this Proposed Action is required to modernize the information systems that are in place at the installation. With the upgraded information systems, FGGM would gain improved and reliable connectivity with other installations and deployed combat forces.

The Proposed Action to be evaluated in the EA consists of the installation of a total of 6.24 miles of underground fiber optic cable conduit and 34 concrete manholes/vaults that is part of the Voice Over Internet Protocol (VOIP) upgrade project. This I3MP project is located within the boundaries of FGGM, and the cable installation route is depicted in Figure 1. The Outside Plant (OSP) infrastructure would supply fiber optic cable connectivity to existing facilities. Installation of the OSP infrastructure would be accomplished using trenching and directional horizontal boring excavation methods. The OSP would be placed directly adjacent to roadways and other developed areas. The proposed project would not create any additional non-pervious structures or surfaces with ground surface restoration returned to its current state. An existing parking lot will be used as the equipment staging area and an existing stockpile/construction material disposal area will be used for disposal of clean fill and spent bentonite based drilling fluid. The staging area and bentonite/ fill disposal area are also depicted on Figure 1.

Pursuant to the Endangered Species Act (ESA) of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq) and the National Environmental Policy Act (NEPA), we are reviewing information regarding federally listed or proposed species and designated critical habitat that may be present in the potential area of effect.

The purpose of this letter is to request a review of the project area and to solicit comments from your agency regarding impacts, if any, to threatened and endangered species in accordance with the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) and Section 7 of the ESA.

To assist us in identifying issues that may affect the implementation of this project, please provide written comments within 30 days of receipt of this letter to: Suzanne Teague, Directorate of Public Works, Environmental Division, Attn: IMNE-PWE, 4215 Roberts Avenue, Fort Meade, Maryland, 20755-7068. If you have any questions please contact Suzanne Teague 301-677-9185 or by e-mail at [suzanne.m.teague.civ@mail.mil](mailto:suzanne.m.teague.civ@mail.mil).

Sincerely,



Michael P. Butler  
Chief, Environmental Division

Enclosure: Figure 1 Project Location



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

REPLY TO  
ATTENTION OF:

JAN 10 2013

Directorate of Public Works

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

Subject: Coordination regarding I3MP communications Infrastructure Upgrade Project, Fort George G. Meade, Anne Arundel County, Maryland

Dear Ms. Kenney:

The Department of the Army at Fort George G. Meade (FGGM) is preparing an Environmental Assessment (EA) for the proposed Installation Information Infrastructure Modernization Program (I3MP) utility upgrades. Implementation of this Proposed Action is required to modernize the information systems that are in place at the installation. With the upgraded information systems, FGGM would gain improved and reliable connectivity with other installations and deployed combat forces.

The Proposed Action to be evaluated in the EA consists of the installation of a total of 6.24 miles of underground fiber optic cable conduit and 34 concrete manholes/vaults that are part of the Voice Over Internet Protocol (VOIP) upgrade project. This I3MP project is located within the boundaries of FGGM, and the cable installation route is depicted in Figure 1. The Outside Plant (OSP) infrastructure would supply fiber optic cable connectivity to existing facilities. Installation of the OSP infrastructure would be accomplished using trenching and directional horizontal boring excavation methods. The OSP would be placed directly adjacent to roadways and other developed areas. The proposed project would not create any additional non-pervious structures or surfaces with ground surface restoration returned to its current state. An existing parking lot will be used as the equipment staging area and an existing stockpile/ construction material disposal area will be used for disposal of clean fill and spent bentonite based drilling fluid. The staging area and bentonite/ fill disposal area are also depicted on Figure 1.

To assist us in identifying issues that may affect the implementation of this project, please provide written comments within 30 days of receipt of this letter to: Suzanne Teague, Environmental Scientist, Directorate of Public Works, Environmental Division, Attn: IMNE-PWE, 4215 Roberts Avenue, Fort Meade, Maryland, 20755-7068.

If you have any question please contact Ms. Teague by phone at 301-677-9185 or by e-mail at [suzanne.m.teague.civ@mail.mil](mailto:suzanne.m.teague.civ@mail.mil).

Sincerely,

Enclosures: Figure 1 Project Location

  
Michael P. Butler  
Chief, Environmental Division



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

REPLY TO  
ATTENTION OF:

JAN 10 2013

Directorate of Public Works

Ms. Elizabeth J. Cole  
State Historic Preservation Office  
Maryland Historical Trust  
100 Community Place  
Crownsville, MD 21032

Subject: Coordination regarding I3MP communications Infrastructure Upgrade  
Project, Fort George G. Meade, Anne Arundel County, Maryland

Dear Ms. Cole:

The Department of the Army at Fort George G. Meade (FGGM) is preparing an Environmental Assessment (EA) for the proposed Installation Information Infrastructure Modernization Program (I3MP) utility upgrades. The base, which encompasses 5,506 acres, is located in northern Anne Arundel County, Maryland, southeast of the Baltimore-Washington Parkway and west of I-97. Implementation of this proposed undertaking is required to modernize the information systems that are in place at the installation. With the upgraded information systems, FGGM would be able to gain increased connectivity with other installations and deployed combat forces. The purpose of this letter is to initiate consultation with your office pursuant to Section 106 of the National Historic Preservation Act.

The Proposed Action to be evaluated in the EA consists of the installation of a total of 6.24 miles of underground fiber optic cable conduit and 34 concrete manholes/vaults that are part of the Voice Over Internet Protocol (VOIP) upgrade project. This I3MP project is located within the boundaries of FGGM, and the cable installation route is depicted in Figure 1. The Outside Plant (OSP) infrastructure would supply fiber optic cable connectivity to existing facilities. Installation of the OSP infrastructure would be accomplished using trenching and directional horizontal boring excavating methods. The OSP would be placed directly adjacent to roadways and other developed areas. The proposed project would not create any additional non-pervious structures or surfaces with ground surface restoration returned to its current state. An existing parking lot will be used as the equipment staging area and an existing stockpile/construction material disposal area will be used for disposal of clean fill and spent bentonite based drilling fluid. The staging area and bentonite/ fill disposal area are also depicted on Figure 1.

FGGM is in the process of determining the area of potential effects (APE) for the undertaking, per 36 CFR 800.4(a)(1) and completing background research to identify

historic properties within the APE per 36 CFR 800.4(b). Additionally, to fulfill our responsibilities under 36 CFR 800.3(e), we will follow the NEPA process to involve the public. Please identify any concerns you may have regarding this proposed approach so that we may address those concerns and incorporate them in our process.

The results of the identification efforts, in addition to an assessment of the undertaking's effects on any historic properties within the APE, will be the subject of future consultation with your office on this project.

Questions regarding this matter should be directed to Jerald Glodek, Directorate of Public Works, Environmental Division, Attn: IMNE-PWE, 4215 Roberts Avenue, Fort Meade, Maryland, 20755-7068; by phone at 301-677-9179 or e-mail, jerald.w.glodek.civ.@mail.mil.

Sincerely,



Michael P. Butler  
Chief, Environmental Division

Enclosures:  
Figure 1 – Project Location



REPLY TO  
ATTENTION OF:

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

JAN 10 2013

Directorate of Public Works

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

Subject: Coordination regarding I3MP communications Infrastructure Upgrade Project, Fort George G. Meade, Anne Arundel County, Maryland

Dear Ms. Janey:

The Department of the Army at Fort George G. Meade (FGGM) is preparing an Environmental Assessment (EA) for the proposed Installation Information Infrastructure Modernization Program (I3MP) utility upgrades. Implementation of this Proposed Action is required to modernize the information systems that are in place at the installation. With the upgraded information systems, FGGM would gain improved and reliable connectivity with other installations and deployed combat forces.

The Proposed Action to be evaluated in the EA consists of the installation of a total of 6.24 miles of underground fiber optic cable conduit and 34 concrete manholes/vaults that are part of the Voice Over Internet Protocol (VOIP) upgrade project. This I3MP project is located within the boundaries of FGGM, and the cable installation route is depicted in Figure 1. The Outside Plant (OSP) infrastructure would supply fiber optic cable connectivity to existing facilities. Installation of the OSP infrastructure would be accomplished using trenching and directional horizontal boring excavating methods. The OSP would be placed directly adjacent to roadways and other developed areas. The proposed project would not create any additional non-pervious structures or surfaces with ground surface restoration returned to its current state. An existing parking lot will be used as the equipment staging area and an existing stockpile/construction material disposal area will be used for disposal of clean fill and spent bentonite based drilling fluid. The staging area and bentonite/ fill disposal area are also depicted on Figure 1.

To assist us in identifying issues that may affect the implementation of this project, please provide written comments within 30 days of receipt of this letter to: Suzanne Teague, Directorate of Public Works, Environmental Division, Attn: IMNE-PWE, 4215 Roberts Avenue, Fort Meade, Maryland, 20755.

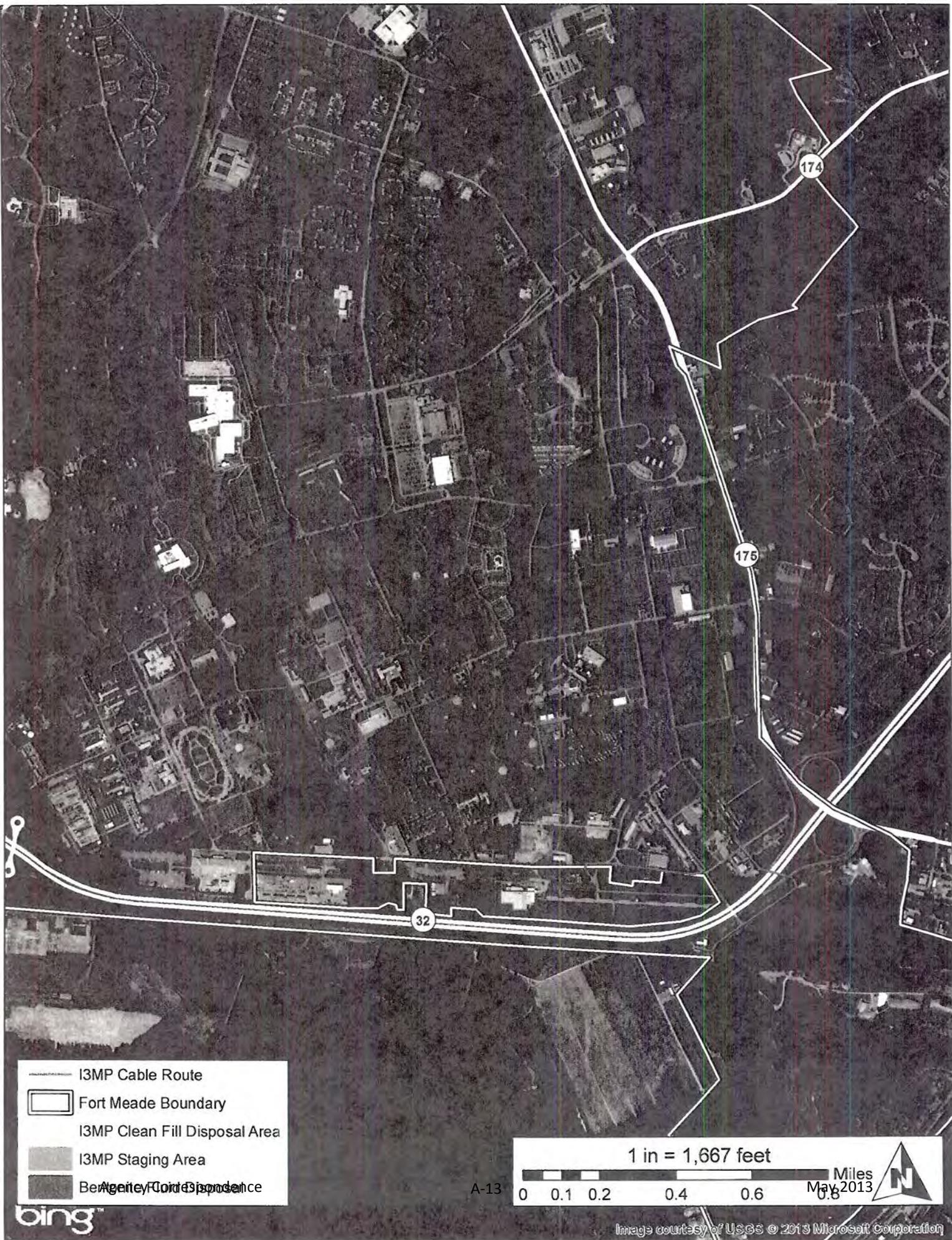
If you have any question please contact Ms. Teague by phone at 301-677-9185 or by e-mail at [suzanne.m.teague.civ@mail.mil](mailto:suzanne.m.teague.civ@mail.mil).

Sincerely,

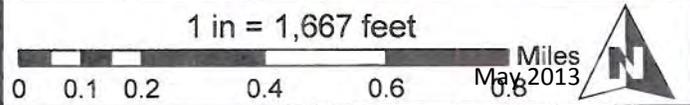


Michael P. Butler  
Chief, Environmental Division

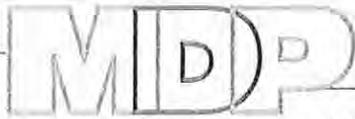
Enclosures: Figure 1 – Project Location



-  I3MP Cable Route
-  Fort Meade Boundary
-  I3MP Clean Fill Disposal Area
-  I3MP Staging Area
-  Agency Contamination



A-13



Maryland Department of Planning

Sustainable Attainable

March 5, 2013

Ms. Suzanne Teague
Project Manager, Environmental Division
Army Directorate of Public Works
Attn: IMNE-PWE
4215 Roberts Avenue
Fort Meade, MD 20755

STATE CLEARINGHOUSE REVIEW – ADDITIONAL REVIEWER COMMENTS RECEIVED

State Application Identifier: MD20130115-0035

Project Description: Scoping prior to Environment Assessment: Coordination Regarding 13MP Communications Infrastructure Upgrade Project: no creation of additional impervious structures or surfaces at Fort George G. Meade

Project Location: Anne Arundel County

Clearinghouse Contact: Bob Rosenbush

Dear Ms. Teague:

We are forwarding the enclosed comments made by the Maryland Department of the Environment, and the Maryland Department of Planning, including the Maryland Historical Trust regarding the referenced project for your information. The Maryland Department of the Environment addressed issues relating to solid waste, and water-quality standards. See the attached letter, comments, and a map.

The Maryland Historical Trust stated that it has reviewed the project information in accordance with Section 106 of the National Historic Preservation Act, and is writing to provide its comments regarding effects on historic properties. Some of the historic resources on Fort Gorge G. Meade are protected by a preservation easement held by the Maryland Historical Trust. All proposed utility work within the easement boundary must be reviewed by the Maryland Historical Trust Easement Committee, and approved by the Director. Any questions regarding the Easement Committee's review should be directed to Amy Skinner at askinner@mdp.state.md.us or 410-514-7632. Otherwise the remaining work would appear to have 'no adverse effect' on historic resources. Provided this condition is met, Section 106 consultation for the undertaking is complete and no further comment from the Maryland Historical Trust compliance office will be necessary at this time. If the Applicant should have any questions regarding Section 106 review, please contact Amanda R. Apple at aapple@mdp.state.md.us or 410-514-7630.

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,

[Handwritten signature of Linda C. Janey]

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

LCJ:BR
Enclosures
cc: Beth Cole-MHT
Amanda Degen - MDE

13-0035\_OLRR.OTH.doc

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

Richard Eberhart Hall, AICP, Secretary
Matthew J. Power, Deputy Secretary

Agency Correspondence

A-14

May 2013

301 West Preston Street - Suite 1101 - Baltimore - Maryland - 21201

Tel: 410.767.4500 - Toll Free: 1.877.767.6272 - TTY users: Maryland Relay - Planning.Maryland.gov



## MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard • Baltimore, Maryland 21230

410-537-3000 • 1-800-633-6101 • <http://www.mde.state.md.us>

Martin O'Malley  
Governor

Robert M. Summers, Ph.D  
Secretary

Anthony G. Brown  
Lieutenant Governor

February 11, 2013

Ms. Suzanne Teague  
Project Manager, Environmental Division  
Army Directorate of Public Works  
Attn: IMNE-PWE  
4215 Roberts Avenue  
Forte Meade, MD 20755

RE: State Application Identifier: MD20130115-0035  
Project: Scoping prior to Environment Assessment: Coordination Regarding 13MP  
Communications Infrastructure Upgrade Project: no creation of additional impervious  
structures or surfaces at Fort George G. Meade

Dear Ms. Teague:

Thank you for the opportunity to review the above referenced project. The document was circulated throughout the Maryland Department of the Environment (MDE) for review. MDE's review findings are contingent upon certain actions as outlined below and in the enclosure.

1. Any solid waste including construction, demolition and land clearing debris, generated from the subject project, must be properly disposed of at a permitted solid waste acceptance facility, or recycled if possible. Contact the Solid Waste Program at (410) 537-3315 for additional information regarding solid waste activities and contact the Waste Diversion and Utilization Program at (410) 537-3314 for additional information regarding recycling activities.
2. Please see the enclosure for additional comments provided by the Science Services Administration.

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

Sincerely,

Amanda R. Degen  
MDE Clearinghouse Coordinator  
Office of Communications

Enclosure  
cc: Bob Rosenbush, State Clearinghouse

**Scoping prior to EA: Communications Infrastructure Upgrade**

**Maryland Department of the Environment - Science Services Administration**

**REVIEW FINDING: R1 Consistent with Qualifying Comments**  
**(MD2013 0115-0035)**

The following additional comments are intended to alert interested parties to issues regarding water quality standards. The comments address:

**A. Water Quality Impairments:** Section 303(d) of the federal Clean Water Act requires the State to identify impaired waters and establish Total Maximum Daily Loads (TMDLs) for the substances causing the impairments. A TMDL is the maximum amount of a substance that can be assimilated by a waterbody such that it still meets water quality standards.

**Planners should be aware of existing water quality impairments identified on Maryland's 303(d) list. The Project is situated in the Little Patuxent River watershed, identified by the 8-digit code 02131105 which is currently impaired by several substances and subject to regulations regarding the Clean Water Act.**

Planners may find a list of nearby impaired waters by entering the 8-digit basin code into an on-line database linked to the following URL:  
<http://www.mde.state.md.us/programs/Water/TMDL/Integrated303dReports/Pages/303d.aspx>.

This list is updated every even calendar year. Planners should review this list periodically to help ensure that local decisions consider water quality protection and restoration needs. **Briefly, the current impairments that are relevant to the Project include the following:**

**Little Patuxent River (02131105)**

**Sediments:** Non-tidal. A TMDL has been written and approved by EPA.  
**Metals:** Non-tidal. A TMDL for Cadmium is pending development.  
**Biological:** Non-tidal. A TMDL is pending development.

**B. TMDLs:** Development and implementation of any Plan should take into account consistency with TMDLs developed for the impaired waterbodies referenced above. Government decisions made prior to the development of a TMDL should strive to ensure no net increase of impairing substances. TMDLs are made available on an updated basis at the following web site:  
<http://www.mde.state.md.us/programs/Water/TMDL/CurrentStatus/Pages/Programs/WaterPrograms/TMDL/Summittals/Index.aspx>

Special protections for high-quality waters in the local vicinity, which are identified pursuant to Maryland's anti-degradation policy;

**C. Anti-degradation of Water Quality:** Maryland requires special protections for waters of very high quality (Tier II waters). The policies and procedures that govern these special waters are commonly called "anti-degradation policies." This policy states that "proposed amendments to county plans or discharge permits for discharge to Tier II waters that will result in a new, or an increased, permitted annual discharge of pollutants and a potential impact to water quality, shall evaluate alternatives to eliminate or reduce discharges or impacts." These permitted annual discharges are not just traditional Point Sources, it can include all discharges such as Stormwater.

**Currently, Tier II waters are not present in the area surrounding the project.**

Planners should be aware of legal obligations related to Tier II waters described in the Code of Maryland Regulations (COMAR) 26.08.02.04 with respect to current and future land use plans. Information on Tier II waters can be obtained online at: <http://www.dsd.state.md.us/comar/getfile.aspx?file=26.08.02.04.htm> and policy implementation procedures are located at <http://www.dsd.state.md.us/comar/getfile.aspx?file=26.08.02.04-1.htm>

Planners should also note that since the Code of Maryland Regulations is subject to periodic updates. A list of Tier II waters pending Departmental listing in COMAR can be found, with a discussion and maps for each county, at the following website:

<http://www.mde.state.md.us/programs/researchcenter/EnvironmentalData/Pages/researchcenter/data/waterqualitystandards/antidegradation/index.aspx>

## **ADDITIONAL COMMENTS**

### **Chesapeake Bay TMDL**

With the completion of the Chesapeake Bay TMDL, the Chesapeake Bay Program Office (CBPO) will be able to provide loading data at a more refined scale than in the past. MDE will be able to use the CBPO data to estimate pollution allocations at the jurisdictional level (which will include Federal Facilities) to provide allocations to the Facilities. These allocations, both Wasteload (WLA) and Load Allocation (LA) could call for a reduction in both Point Sources and Nonpoint Sources. **Facilities should be aware of reductions and associated implementation required by WIPs or FIPs.**

MD20130115-0035

**Stormwater**

The project should consider all Maryland Stormwater Management Controls. Site Designs should consider all Environmental Site Design to the Maximum Extent Practicable and "Green Building" Alternatives. Designs that reduce impervious surface and BMPs that increase runoff infiltration are highly encouraged.

Further Information:

<http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/Pages/Programs/WaterPrograms/SedimentandStormwater/swm2007.aspx>

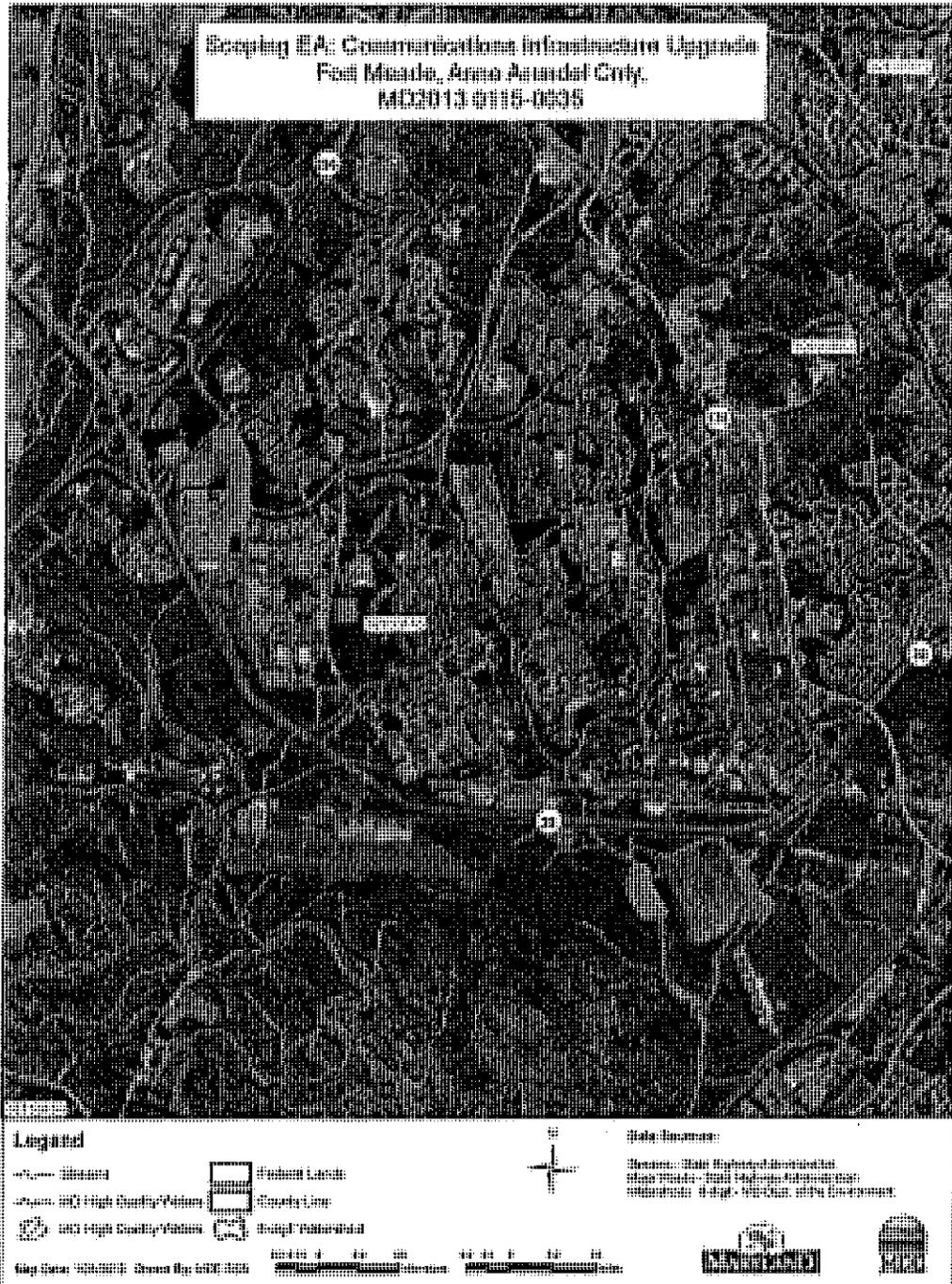
Environmental Site Design (Chapter 5):

<http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/MarylandStormwaterDesignManual/Documents/www.mde.state.md.us/assets/document/chapter5.pdf>

Redevelopment Regulations:

<http://www.dsd.state.md.us/comar/comarhtml/26/26.17.02.05.htm>

AP 20130115-0035





# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

Chesapeake Bay Field Office  
177 Admiral Cochrane Drive  
Annapolis, Maryland 21401  
<http://www.fws.gov/chesapeakebay>

March 13, 2013

Department of the Army  
US Army Installation Management Command  
Headquarters, United States Army Garrison  
4551 Ilewellyn Avenue, Suite 5000  
Fort George G. Meade, MD 20755-5000

*RE: Coordination regarding 13MP communications Infrastructure Upgrade Project Fort  
George G. Meade, Anne Arundel County MD*

Dear Michael P. Butler:

This responds to your letter, received January 10, 2013, requesting information on the presence of species which are federally listed or proposed for listing as endangered or threatened within the vicinity of the above referenced project area. We have reviewed the information you enclosed and are providing comments in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

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

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

Effective August 8, 2007, under the authority of the Endangered Species Act of 1973, as amended, the U.S. Fish and Wildlife Service (Service) removed (delist) the bald eagle in the lower 48 States of the United States from the Federal List of Endangered and Threatened Wildlife. However, the bald eagle will still be protected by the Bald and Golden Eagle Protection Act, Lacey Act and the Migratory Bird Treaty Act. As a result, starting on August 8, 2007, if your project may cause "disturbance" to the bald eagle, please consult the "National Bald Eagle Management Guidelines" dated May 2007.

If any planned or ongoing activities cannot be conducted in compliance with the National Bald Eagle Management Guidelines (Eagle Management Guidelines), please contact the Chesapeake Bay Ecological Services Field Office at 410-573-4573 for technical assistance. The Eagle Management Guidelines can be found at:

<http://www.fws.gov/migratorybirds/issues/BaldEagle/NationalBaldEagleManagementGuidelines.pdf>.

In the future, if your project can not avoid disturbance to the bald eagle by complying with the Eagle Management Guidelines, you will be able to apply for a permit that authorizes the take of bald and golden eagles under the Bald and Golden Eagle Protection Act, generally where the take to be authorized is associated with otherwise lawful activities.

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

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interests in these resources. If you have any questions or need further assistance, please contact Trevor Clark at (410) 573-4527.

Sincerely,

A handwritten signature in cursive script that reads "G. LaRouche".

Genevieve LaRouche  
Supervisor



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

March 21, 2013

Ms. Suzanne Teague  
Directorate of Public Works  
Environmental Division, ATTN: IMNE-PWE  
4215 Roberts Avenue  
Fort Meade, MD 20755-7068

**RE: Environmental Review for EA for proposed installation information infrastructure modernization program (I3MP) utility upgrades, Fort George G. Meade, Anne Arundel County, MD.**

Dear Ms. Teague:

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

ER# 2013.0066.aa

**APPENDIX B**

**RECORD OF NON-APPLICABILITY (RONA)**  
**AND**  
**AIR QUALITY CALCULATIONS**

## Acronyms

CAA	Clean Air Act
DOPAA	Description of Proposed Action and Alternatives
GHG	greenhouse gas
NAAQS	National Ambient Air Quality Standards
NO <sub>x</sub>	nitrogen oxides
O <sub>3</sub>	ozone
OTR	Ozone Transport Region
PM <sub>2.5</sub>	particulate matter with an aerodynamic diameter less than 2.5 microns
RONA	Record of Non-applicability
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SO <sub>2</sub>	sulfur dioxide
TPY	tons per year
USEPA	US Environmental Protection Agency
VOC	volatile organic compound

**RECORD OF NON-APPLICABILITY (RONA)  
FOR CLEAN AIR ACT CONFORMITY  
Fort George G. Meade, Anne Arundel County, MD**

The Proposed Action falls under the Record of Non-Applicability (RONA) category and is documented with this RONA.

**Project/Action Name:** Fort George G. Meade Installation Information Infrastructure Modernization Program

**Project/Action Point of Contact:** Michael P. Butler  
Chief, Environmental Division  
Fort George G. Meade

**Begin Date:** June 2013

**End Date:** December 2013

General Conformity under the Clean Air Act (CAA), Section 176 has been evaluated for the project described above according to the requirements of 40 CFR 93, Subpart B. The General Conformity Rule applies to federal actions occurring in regions designated as being in nonattainment for the NAAQS or attainment areas subject to maintenance plans (maintenance areas). Threshold (*de minimis*) rates of emissions have been established for federal actions with the potential to have significant air quality impacts. If a project/action located in an area designated as non-attainment or maintenance exceeds these *de minimis* levels, a general conformity determination is required. Anne Arundel County is designated as a moderate ozone (8-hour) non-attainment area and a nonattainment area for the annual particulate matter with an aerodynamic diameter less than 2.5 microns (PM<sub>2.5</sub>) standard. Due to the proximity to the urbanized east coast of the United States, Anne Arundel County is considered an Ozone Transport Region (OTR). The OTR has a moderate ozone nonattainment classification by definition. Because ozone (O<sub>3</sub>) forms from other emissions, the analysis focuses on O<sub>3</sub> precursors, volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>), as well as PM<sub>2.5</sub> and its precursor, sulfur dioxide (SO<sub>2</sub>). The region is in attainment for other criteria pollutants.

A General Conformity applicability analysis of this project/action was performed to assess the air emissions associated with the proposed action to determine if maximum annual direct and indirect emissions from this project/action would exceed *de minimis thresholds*. Total emissions resulting from construction activities have been estimated using available project data, general air quality assumptions, and USEPA emission factors. There are no operational air emissions. Based on the air quality analysis for the Proposed Action, the maximum estimated emissions would be below conformity *de minimis* levels (Table 1).

<b>Table 1. Estimated Emissions from Implementation of the Proposed Action</b>				
<i>Estimated Emissions</i>	<i>Emissions (tons)</i>			
	<i>VOCs</i>	<i>NO<sub>x</sub></i>	<i>PM<sub>2.5</sub></i>	<i>SO<sub>2</sub></i>
Total Construction Emissions	0.0129	0.1748	12.0721	0.0024
<i>de minimis</i> Thresholds (tons/year)	50	100	100	100
Exceeds <i>de minimis</i> threshold?	No	No	No	No

Attached to this RONA is a summary of the calculations, methodology, and data including the estimated construction and operational emissions due to implementation of the Proposed Action.

### CONCLUSION

The project area is nonattainment area for the PM<sub>2.5</sub> and the 8-hour O<sub>3</sub> NAAQS. SO<sub>2</sub> is a precursor to the formation of PM<sub>2.5</sub> and VOCs and NO<sub>x</sub> are precursors to the formation of O<sub>3</sub>. Emissions associated with construction activities for the Proposed Action were calculated based on standardized methodologies. Emissions were then compared with *de minimis* thresholds for the Metropolitan Baltimore Intrastate Air Quality Control Region, which includes Fort Meade, Maryland.

The U.S. Army concludes that *de minimis* thresholds for applicable criteria pollutants would not be exceeded as a result of implementation of the Proposed Action. The emissions data supporting that conclusion is shown in Table 1, which is a summary of the calculations, methodology, and data attached to this RONA. Therefore, the U.S. Army concludes that further formal Conformity Determination procedures are not required, resulting in this RONA.

### RONA APPROVAL

To the best of my knowledge, the information presented in this RONA is correct and accurate, and I concur in the finding that the Proposed Action does not require a formal CAA Conformity Determination.

---

MICHAEL P. BUTLER  
Chief, Environmental Division  
Directorate of Public Works

---

Date

## General Conformity Analysis

### **Background**

The Proposed Action is the six-month installation of fiber-optic cable at Fort George G. Meade in Anne Arundel County, Maryland to modernize the information infrastructure. This action is scheduled over a six-month period and includes the installation of 4.45 miles of underground fiber optic cable conduit, 31 manholes, and three handholes.

The Clean Air Act General Conformity Rule (58 FR 63214, November 30, 1993, Final Rule, Determining Conformity of General Federal Actions to State or Federal Implementation Plans) dictates that a conformity review be performed when a Federal action generates air pollutants in a region that has been designated a non-attainment or maintenance area for one or more NAAQS. The general conformity rule was designed to ensure that Federal actions do not impede local efforts to control air pollution. It is called a conformity rule because Federal agencies are required to demonstrate that their actions "conform with" (i.e., do not undermine) the approved State Implementation Plan (SIP) for their geographic area. The purpose of conformity is to (1) ensure Federal activities do not interfere with the air quality budgets in the SIPs; (2) ensure actions do not cause or contribute to new violations, and (3) ensure attainment and maintenance of the NAAQS. Federal agencies make this demonstration by performing a conformity review.

The Proposed Action would be subject to detailed conformity determinations unless these actions are clearly considered *de minimis* emissions; use of these thresholds assures that the conformity rule covers only major federal actions. USEPA has set the *de minimis* threshold at 100 tons per year (TPY) for PM<sub>2.5</sub> in all nonattainment areas (including precursors). The *de minimis* level for NO<sub>x</sub> for a moderate nonattainment area inside an OTR is 100 TPY and for VOCs the *de minimis* level is 50 TPY.

### **Methodology**

A conformity review requires consideration of both direct and indirect air emissions associated with the proposed action. Direct emissions are those that occur as a direct result of the action, and occur at the same time and place as the action. Sources that would contribute to direct emissions from this project would include demolition or construction activities associated with the Proposed Action and equipment used to facilitate the action (e.g., construction vehicles). Indirect emissions are those that occur at a later time or distance from the place where the action takes place, but may be reasonably anticipated because of the proposed action. To be counted as an indirect emission, the Federal proponent for the action must have continuing control over the source of the indirect emissions. Sources of indirect emissions for the project would include on-base commuter activity to and from the construction site (e.g., employee vehicle emissions).

Both stationary and mobile sources must be included when calculating the total of direct and indirect emissions, but this project involves only mobile sources. Air pollutant emissions generated by the Proposed Action were calculated to determine whether the total of direct and indirect emissions for PM<sub>2.5</sub> and O<sub>3</sub> and their precursors would be below the conformity *de minimis* limits.

Direct Emissions:

The Proposed Action was assessed in detail in order to ensure a conservative evaluation. Each potential activity involved in the construction phase of the project (site clearing, trenching, gravel work, etc.) was considered, along with the types of off-road equipment and on-road vehicles that would be involved in the activity. Basic assumptions on the length of the trenches, the square footages of disturbed areas, and volumes of materials to be removed through trenching were obtained from the Description of Proposed Action and Alternatives (DOPAA). These project-specific figures were then used with productivity factors for the equipment to estimate the potential emissions for criteria pollutants and greenhouse gases (GHGs).

Hours of operation for each piece of equipment were determined from site-specific information and productivity factors determined by industry standard equipment production rates. For example, a bulldozer used for site clearing has a productivity factor of 11.6 hours per acre. Given that the proposed action will require clearing of approximately 4.8 acres, the time of operation for a bulldozer used for site clearing can be calculated at 56 hours.

Given the calculated hours of operation for each piece of equipment, emissions were estimated based on equipment-specific emission factors provided in USEPA's NONROAD 2008 (<http://www.epa.gov/oms/nonrdmdl.htm>) for off-road equipment and USEPA's MOVES 2010 (<http://www.epa.gov/otaq/models/moves/index.htm>) for diesel and gasoline vehicles. The tons of emission produced by each piece of equipment are determined by the basic equation:

$$\text{Tons of emissions for 1 piece of equipment} = (\text{Emission factor g/hp-hr}) \times (\text{hp of equipment}) \times (\text{hours of use}) \times (1 \text{ lb} / 453.5924 \text{ g}) \times (1 \text{ ton} / 2000 \text{ lbs})$$

For the same bulldozer used in clearing operations referenced above, the calculations for PM<sub>2.5</sub> would be:

$$\text{Tons of emissions for 1 bulldozer in site clearing} = (0.29 \text{ g/hp-hr}) \times (145 \text{ hp}) \times (56 \text{ hrs}) \times (1 \text{ lb} / 453.5924 \text{ g}) \times (1 \text{ ton} / 2000 \text{ lbs})$$

$$\text{Tons of PM}_{2.5} \text{ emission} = 0.0026 \text{ tons}$$

The direct emissions calculated reflect the totals for entire estimated six-month construction period. As the work is projected for 2013, emissions factors from 2013 were used from both NONROAD 2008 and MOVES 2010.

Indirect Emissions:

Emissions generated from on-base commuting of construction crews are assumed to be the indirect emissions impacts of this project. Emissions from construction personnel traffic were calculated using the calculated hours for the equipment used in various construction activities. The hours for all equipment for each activity were added together and divided by 8 to generate an estimate for the number of days for that specific activity. To determine the number of vehicle trips associated with each activity, the calculated number of days is multiplied by 1.25, based on the method developed in the South Coast Air Quality Management District (SCAQMD) California Emissions Estimator Model Appendix A: Calculation Details for CalEEMod (Environ International, February 2011). The average mileage for each vehicle trip on Fort Meade is estimated to be 4 miles, given the area covered by the Proposed Action. A lower limit of 4 vehicle trips per activity was assigned to all activities, to allow for a more conservative estimate.

The equation used to calculate the emissions is:

$$(\# \text{ of vehicle trips}) \times (\# \text{ of miles/trip}) \times (\text{emissions factor lbs/mile}) \times (1 \text{ ton}/2000 \text{ lb}) = \text{tons of vehicle emissions per year}$$

The calculations for indirect emissions of NO<sub>x</sub> associated with site clearing activities are:

$$(26 \text{ vehicle trips}) \times (4 \text{ miles/trip}) \times (0.005098 \text{ lbs/mile}) \times (1 \text{ ton}/2000 \text{ lb}) = 0.00026 \text{ tons NO}_x \text{ from vehicle emissions}$$

To obtain a total figure for indirect emissions of NO<sub>x</sub> during the Proposed Action, the estimated emissions from each activity were added together. The total calculated NO<sub>x</sub> for indirect emissions is 0.0005 tons for the Proposed Action.

Operating Emissions:

Once the new cables have been installed, the equipment operations will not generate any air emissions. Calculations have therefore not been generated for the operational phase of the project.

**Conclusion**

The air emissions calculations examined the direct and indirect emissions from the entire six-month Proposed Action. Estimated emissions did not exceed the threshold limits. The *de minimis* level for VOCs for a moderate nonattainment area inside an OTR is 50 TPY. The *de minimis* thresholds for NO<sub>x</sub>, SO<sub>2</sub>, and PM<sub>2.5</sub> are 100 TPY. Based on the summary of construction emissions calculated for the Proposed Action, none of these pollutants exceeds the threshold levels. Because total projected emissions are below threshold levels, the action is exempt from further Conformity Analysis.

References:

ENVIRON International. 2011. South Coast Air Quality Management District, California Emissions Estimator Model Appendix A: Calculation Details for CalEEMod. February 2011.

U.S. Environmental Protection Agency, NONROAD Model (nonroad engines, equipment, and vehicles), available at website <http://www.epa.gov/oms/nonrdmdl.htm>

U.S. Environmental Protection Agency, MOVES (Motor Vehicle Emission Simulator), available at website <http://www.epa.gov/otaq/models/moves/index.htm>

## **AIR QUALITY CALCULATIONS**

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Table 1. Construction Emissions - Fort Meade I3MP Project - Summary

Activity	VOC tons	CO tons	NOx tons	SO <sub>2</sub> tons	PM <sub>10</sub> tons	PM <sub>2.5</sub> tons	CH <sub>4</sub> metric tons	N <sub>2</sub> O metric tons	CO <sub>2</sub> metric tons	CO <sub>2e</sub> metric tons
Site Clearing	0.0046	0.0208	0.0337	0.0009	0.0035	0.0034	0.2780	0.1246	39.80	84.27
Site Prep (Excavation, Trenching, etc.)	0.0047	0.0192	0.0699	0.0011	0.0038	0.0037	0.0493	0.0221	6.92	14.80
Gravel Work	0.0029	0.0142	0.0620	0.0002	0.0028	0.0027	0.0079	0.0035	5.15	6.39
Concrete Work	0.0005	0.0025	0.0088	0.0002	0.0004	0.0004	0.0124	0.0056	0.68	2.67
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	12.0617	1.2062	0.0000	0.0000	0.00	0.00
Construction Worker Emissions	0.0001	0.0038	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.09	0.09
<b>Totals</b>	<b>0.01</b>	<b>0.06</b>	<b>0.17</b>	<b>0.00</b>	<b>12.07</b>	<b>1.22</b>	<b>0.35</b>	<b>0.16</b>	<b>52.64</b>	<b>108.22</b>

Table 2. Construction Emissions - Fort Meade I3MP Project - Clearing Activities

Clearing Area 4.8 Acres

Off-road Equipment	Cumulative Hours of Operation	Engine HP	Load Factor	VOC <sup>1</sup>	CO <sup>1</sup>	NOx <sup>1</sup>	SO <sub>2</sub> <sup>1</sup>	PM <sub>10</sub> <sup>1</sup>	PM <sub>2.5</sub> <sup>1</sup>	CH <sub>4</sub> <sup>2</sup>	N <sub>2</sub> O <sup>2</sup>	CO <sub>2</sub> <sup>1</sup>	VOC	CO	NOx	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>			
				g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	lb	lb	lb	lb	lb	lb	lb	lb	lb	lb		
Dozer	56	145	0.58	0.38	1.41	4.17	0.12	0.30	0.29	4.67	2.09	536	3.88	14.56	42.96	1.19	3.05	2.96	48.10	21.56	5,515			
Loader w/ integral Backhoe	56	87	0.21	1.43	7.35	6.35	0.15	1.06	1.03	2.80	1.26	692	3.20	16.44	14.20	0.33	2.38	2.31	6.27	2.81	1,547			
Small backhoe	56	55	0.21	1.43	7.35	6.35	0.15	1.06	1.03	1.77	0.79	692	2.02	10.39	8.98	0.21	1.50	1.46	2.51	1.12	978			
On-road Equipment	Cumulative Hours of Operation	Engine HP	Productivity based Speed (miles/hour)	VOC <sup>3</sup>	CO <sup>3</sup>	NOx <sup>3</sup>	SO <sub>2</sub> <sup>3</sup>	PM <sub>10</sub> <sup>3</sup>	PM <sub>2.5</sub> <sup>3</sup>	CH <sub>4</sub> <sup>3</sup>	N <sub>2</sub> O	CO <sub>2</sub> <sup>3</sup>	VOC	CO	NOx	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>			
				lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb	lb	lb	lb	lb	lb	lb	lb	lb	lb		
Dump Truck (6 CY Capacity)	5	230	6	0.0017	0.0086	0.0392	1.82E-05	0.0017	0.0016	8.37E-05	NA	3.3824	0.05	0.27	1.22	0.00	0.05	0.05	0.00	NA	105			
<b>Subtotal (lbs):</b>													<b>9</b>	<b>42</b>	<b>67</b>	<b>2</b>	<b>7</b>	<b>7</b>	<b>57</b>	<b>25</b>	<b>8,144</b>			

<sup>1</sup> Emissions Factors from USEPA's NONROAD 2008

<sup>2</sup> Emission Factors from CEQ's Federal GHG Accounting and Reporting Guidance Technical Document, 2010

<sup>3</sup> Emissions Factors from MOVES2010 (on-road diesel) Assuming 2010 or 2011 Model Year

Table 3. Construction Emissions - Fort Meade ISMP Project - Site Prep - Excavate/Fill - Trenching - Grading

Site Prep - Excavate/Fill (CY)	1,539 CY	Assume 100% hauled in or out	1,539 CY hauled		
Trenching (LF)	23,521 LF	Assume 3 ft deep trench, 1.5 ft wide	3920 CY	Assume 60% hauled in or out	2,352 CY hauled
Grading (SY)	208,495 SF	Convert	23164 SY	Assume compact 0.5 feet (0.166 yards)	3,861 CY compacted

Off-road Equipment	Cumulative Hours of Operation	Engine HP	Load Factor	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO <sub>2</sub> g/hp-hr	PM <sub>10</sub> g/hp-hr	PM <sub>2.5</sub> g/hp-hr	CH <sub>4</sub> g/hp-hr	N <sub>2</sub> O g/hp-hr	CO <sub>2</sub> g/hp-hr	VOC lb	CO lb	NOx lb	SO <sub>2</sub> lb	PM <sub>10</sub> lb	PM <sub>2.5</sub> lb	CH <sub>4</sub> lb	N <sub>2</sub> O lb	CO <sub>2</sub> lb			
Excavator	5	243	0.59	0.34	1.21	4.03	0.12	0.22	0.22	7.83	3.51	536	0.56	1.96	6.53	0.19	0.36	0.35	12.69	5.69	869			
Skid Steer Loader	6	160	0.23	0.38	1.47	4.34	0.12	0.31	0.30	5.16	2.31	536	0.19	0.73	2.17	0.06	0.15	0.15	2.57	1.15	267			
Dozer (Rubber Tired)	6	145	0.59	0.38	1.41	4.17	0.12	0.30	0.29	4.67	2.09	536	0.40	1.49	4.39	0.12	0.31	0.30	4.91	2.20	563			
Scraper Hauler Excavator	6	365	0.58	0.38	1.42	4.19	0.12	0.30	0.29	11.76	5.27	536	0.98	3.69	10.89	0.30	0.77	0.75	30.60	13.72	1,394			
Compactor	29	103	0.58	0.40	1.57	4.57	0.12	0.32	0.31	3.32	1.49	536	1.49	5.91	17.20	0.43	1.20	1.17	12.50	5.60	2,017			
Grader	8	285	0.58	0.34	1.21	4.07	0.12	0.23	0.22	9.18	4.12	536	1.03	3.62	12.20	0.35	0.68	0.66	27.53	12.34	1,606			
Trenching with backhoe loader	56	87	0.59	0.35	1.25	4.23	0.12	0.24	0.23	2.80	1.26	536	2.21	7.91	26.83	0.73	1.51	1.47	17.77	7.96	3,396			
On-road Equipment	Cumulative Hours of Operation	Engine HP	Productivity based Speed (miles/hour)	VOC lb/mile	CO lb/mile	NOx lb/mile	SO <sub>2</sub> lb/mile	PM <sub>10</sub> lb/mile	PM <sub>2.5</sub> lb/mile	CH <sub>4</sub> lb/mile	N <sub>2</sub> O lb/mile	CO <sub>2</sub> lb/mile	VOC lb	CO lb	NOx lb	SO <sub>2</sub> lb	PM <sub>10</sub> lb	PM <sub>2.5</sub> lb	CH <sub>4</sub> lb	N <sub>2</sub> O lb	CO <sub>2</sub> lb			
Dump Truck (12 CY capacity)	54	230	6	0.0017	0.0086	0.0392	1.82E-05	0.0017	0.0016	8.37E-05	NA	3.3824	0.54	2.78	12.72	0.01	0.55	0.53	0.03	NA	1,097			
Delivery Truck	27	230	45	0.0017	0.0086	0.0392	1.82E-05	0.0017	0.0016	8.37E-05	NA	3.3824	1.98	10.24	46.81	0.02	2.02	1.96	0.10	NA	4,037			
<b>Subtotal (lbs):</b>													<b>9</b>	<b>38</b>	<b>140</b>	<b>2</b>	<b>8</b>	<b>7</b>	<b>109</b>	<b>49</b>	<b>15,247</b>			

Table 4. Construction Emissions - Fort Meade I3MP Project - Gravel Work

Amount of Gravel Needed 828 CY

Off-road Equipment				VOC	CO	NOx	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	VOC	CO	NOx	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	
Cumulative Hours of Operation	Engine HP	Load Factor		g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	g/hp-hr	lb	lb	lb	lb	lb	lb	lb	lb	lb	lb
Dozer	8	185	0.59	0.34	1.21	4.08	0.12	0.23	0.22	5.96	2.67	536	0.68	2.40	8.13	0.23	0.45	0.44	11.87	5.32	1,067	
Wheel Loader for Spreading	10	87	0.59	0.35	1.25	4.23	0.12	0.24	0.23	2.80	1.26	536	0.41	1.46	4.96	0.13	0.28	0.27	3.28	1.47	627	
Compactor	6	103	0.43	0.36	1.34	4.45	0.12	0.26	0.25	3.32	1.49	536	0.22	0.80	2.67	0.07	0.15	0.15	1.99	0.89	321	
On-road Equipment				VOC	CO	NOx	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	VOC	CO	NOx	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub>	
Cumulative Hours of Operation	Engine HP	Productivity based Speed (miles/hour)		lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb	lb	lb	lb	lb	lb	lb	lb	lb	
Dump Truck (gravel delivery)	107	230	26	0.0017	0.0086	0.0392	1.82E-05	0.0017	0.0016	8.37E-05	NA	3.3824	4.58	23.67	108.22	0.05	4.67	4.53	0.23	NA	9,333	
<b>Subtotal (lbs):</b>													<b>6</b>	<b>28</b>	<b>124</b>	<b>0</b>	<b>6</b>	<b>5</b>	<b>17</b>	<b>8</b>	<b>11,348</b>	

Table 5. Construction Emissions - Fort Meade I3MP Project - Concrete Work

Concrete Needed  
 Foundation Work 0 CY  
 Trench Conduit 210 CY  
 Total 210 CY

Note: Assume all excavated soil is accounted for in Excavate/Fill and Trenching

Off-road Equipment	Cumulative Hours of Operation	Engine HP	Load Factor	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO <sub>2</sub> g/hp-hr	PM <sub>10</sub> g/hp-hr	PM <sub>2.5</sub> g/hp-hr	CH <sub>4</sub> g/hp-hr	N <sub>2</sub> O g/hp-hr	CO <sub>2</sub> g/hp-hr	VOC lb	CO lb	NOx lb	SO <sub>2</sub> lb	PM <sub>10</sub> lb	PM <sub>2.5</sub> lb	CH <sub>4</sub> lb	N <sub>2</sub> O lb	CO <sub>2</sub> lb
Concrete Truck	10	300	0.43	0.38	1.75	6.18	0.11	0.27	0.26	9.67	4.33	529.89	1.08	4.96	17.55	0.32	0.76	0.74	27.44	12.30	1,504
<b>Subtotal (lbs):</b>													<b>1</b>	<b>5</b>	<b>18</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>27</b>	<b>12</b>	<b>1,504</b>

**Table 6. Construction Emissions - Fort Meade I3MP Project - Fugitive Dust**

<b>Year</b>	<b>PM<sub>10</sub> tons/acre/mo</b>	<b>acres</b>	<b>days of disturbance</b>	<b>PM<sub>10</sub> Total</b>	<b>PM<sub>2.5</sub>/PM<sub>10</sub> Ratio</b>	<b>PM<sub>2.5</sub> Total</b>
2013	0.42	5	120	12.1	0.1	1.2

Table 7. Construction Emissions - Fort Meade I3MP Project - Construction Worker POVs

Activity	Cumulative Hours of Operation	Number of Vehicle Trips	Miles per trip	VOC <sup>4</sup> lb/mi	CO <sup>4</sup> lb/mi	NO <sub>x</sub> <sup>4</sup> lb/mi	SO <sub>2</sub> <sup>4</sup> lb/mi	PM <sub>10</sub> <sup>4</sup> lb/mi	PM <sub>2.5</sub> <sup>4</sup> lb/mi	CH <sub>4</sub> g/mi	N <sub>2</sub> O g/mi	CO <sub>2</sub> <sup>4</sup> lb/mi	VOC lb	CO lb	NOx lb	SO <sub>2</sub> lb	PM <sub>10</sub> lb	PM <sub>2.5</sub> lb	CH <sub>4</sub> lb	N <sub>2</sub> O <sub>2</sub> lb	CO <sub>2</sub> lb		
Site Clearing	167	26	4	0.001	0.037	0.005	0.000	0.000	0.000	0.0271	0.0429	0.919	0.1339	3.8321	0.5308	0.0014	0.0217	0.0200	0.0062	0.0098	95.64		
Site Prep (Excavation, Trenching, etc.)	115	18	4	0.001	0.037	0.005	0.000	0.000	0.000	0.0271	0.0429	0.919	0.0926	2.6519	0.3673	0.0010	0.0150	0.0138	0.0043	0.0068	66.18		
Gravel Work	25	4	4	0.001	0.037	0.005	0.000	0.000	0.000	0.0271	0.0429	0.919	0.0199	0.5696	0.0789	0.0002	0.0032	0.0030	0.0009	0.0015	14.21		
Concrete Work	10	4	4	0.001	0.037	0.005	0.000	0.000	0.000	0.0271	0.0429	0.919	0.0206	0.5890	0.0816	0.0002	0.0033	0.0031	0.0010	0.0015	14.70		
<b>Subtotal (lbs):</b>													<b>0</b>	<b>8</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>191</b>

<sup>4</sup> Emission factors for on-road cars from MOVES2010

**Construction Emissions - Fort Meade I3MP Project**  
**Assumptions Used to Generate Calculations**

- 1) **Basic Conversions**  
 453.59 grams per pound  
 43,560 Conversion from Acre to SF  
 0.03704 Cubic feet to Cubic Yards  
 0.1111 Square Feet to Square Yards  
 1.4 tons/CY for Gravel  
 80,000 lbs/Truck Load for Delivery  
 1.66 CY for each CY of asphalt/concrete demo  
 0.33333333 asphalt thickness for demolition  
 0.33333333 asphalt thickness for pavement  
 2000 pounds per ton  
 145 lb/ft<sup>3</sup> density of Hot Mix Asphalt
- 2) Have assumed that the entire area of disturbance given in Table 2.0-2 of the DOPAA will be cleared for the trenching and pit installation activities. The total square footage is  
 208495 SF = 4.786387 acres
- 3) Excavation will be needed for the pits to be installed as part of the project, but not for the trenching, which will be covered under the calculations for "Trenching with backhoe loader."
- 4) Have assumed the worst case scenario for the trenching, so that the segments to be installed through cable plowing or directional drilling are included in the air emissions calculations for standard trenching. The total lineal feet for trenching has been used from Table 2.0-2 of the DOPAA.  
 23521 LF

5) The area of the pits to be excavated has been calculated as follows:  
 For the handhole/vault pits and manhole/vault pits, the DOPAA gives a depth of 7 feet.  
 Using the areas calculated in Table 2.0-2 of the DOPAA:  
 108 plus 3472 SF Area = 3580 SF total for pits  
 3580 times 7 Ft Depth = 25060 Cubic feet for pits

For the directional boring entrance and exit pits, the DOPAA does not specify a depth. Based on a review of information available on-line (photos, contractor websites), a depth of 4 feet has been assumed. Calculations below use the information from Table 2.0-2 of the DOPAA:  
 4121 SF times 4 Ft Depth = 16484 Cubic feet for directional drilling pits  
 41544 Total CF for all pits  
 1538.79 Total CY excavated for all pits

6) Section 2 of the DOPAA states that the standard trenches will be 3 feet deep and 1.5 feet wide. The CY for the trenches can be calculated as follows:  
 23521 length 3 depth 1.5 width = 105844.5 Cubic feet  
 3920.4803 Cubic yards

7) For grading, have assumed that the total area to be disturbed will need to be graded once the cable installation is complete. The total square footage, from Table 2.0-2 of the DOPAA, is  
 208495 SF = 23163.79 SY

8) For the concrete calculations, have assumed that both types of vaults will be prefabricated and simply brought to the site. This assumption is based on information from the Baltimore Gas and Electric (BG&E) publication, *Conduit Construction Guide*, obtained from the BG&E website, www.BGE.com, in January 2013. This document also implies that concrete conduits for the cables are generally constructed on site. See *BGE 2013.pdf* for details.

9) For construction equipment, a fuel flow rate of 1 gallon used per each 18 hp per hour operated is assumed.

**10) Dump Truck Assumptions**

From the resource below (Hendrickson reference), a dump truck productivity can be estimated as follows:

Excavation			
Distance to dump site:	0.5 Miles	Assumed to be this far for our construction emission estimate purposes.	1 MILE ROUND TRIP
Dump truck capacity	6 CY	Based on standard dump truck capacity	
Speed of dump trucks:	20 miles per hour	Based on estimated speed of trucks between site and fill pit.	
Number of seconds in an hour	3600 Seconds/hour	Standard conversion	
Dumping time	60 Second per load	Based on assumption listed in Example 4-10, page 20 of the reference that 6 CY takes 30 seconds, therefore it is assumed 12 CY would take 60 seconds	
Capacity of the loading bucket	1 CY	Based on the size of the loader/bulldozer used in the calculations	
Number of hours on-site	8 hours	Assume dump trucks work on-site 8 hours per day	

Dump truck travel time round trip =	180 seconds	Equation 4.7, page 19, Hendrickson
Dump truck loading time =	360 seconds	Equation 4.8, page 19, Hendrickson
Dump truck dumping time =	60 seconds	See "dumping time" above

Total Truck Operating time per 6 CY of Material moved=	600 seconds per trip	Equation 4.9, page 19, Hendrickson
	0.166667 hours per trip (6 CY of debris)	CARDNO TEC equation for productivity
	<b>6 miles/hour productivity</b>	Based on 0.17 hours per load trip for a 1 mile driving route

Daily Hauler Productivity is:	288.00 CY per 8 hour day per truck	Equation 4.10, page 19, Hendrickson
Hauler Productivity for Site Clearing:	36.00 CY per hour per 6 CY truck	72.00 CY per hour per 12 CY Truck used for site prep activities

**0.926891 Acres per hour Clearing**

Number of Trucks - Site Clearing	6.47325 # of truck trips per acre	Based on density and truck capacity
	1.078875 # of hours per acre	Based on truck trips per acre * total truck operating time

Density of land clearing debris (wooded area):  
 39 CY of clearing debris/acre  
 (see below)

Fuel Type	Fuel Loading (tons/acre) <sup>1</sup>	Estimated % of each acre <sup>2</sup>	CY/Tons <sup>3</sup>
Hardwood	99	33%	0.75
Softwood	57	33%	0.75
Grass	4.5	34%	0.15

Weighted average density = 53 tons/acre  
 39 CY/acre

Hauler Productivity for Site Prep (excavate, trench)  
**72.00 CY per hour Site Prep**

<sup>1</sup> Huntley, Roy and Thesing, Kirstin B.; U.S. Environmental Protection Agency. *Open Burning and Construction Activities: Improved PM Fine Emission Estimation Techniques in the National Emissions Inventory*. pg5.

<sup>2</sup> Estimation of % fuel types is based on Figure 2.0-1 of the DOPAA.

<sup>3</sup> Ohio Emergency Management Agency. *Appendix F Debris Estimating Guides*; pg 2. [http://ema.ohio.gov/Documents/DRB/Sample\\_Plan/APPENDIX\\_F.doc](http://ema.ohio.gov/Documents/DRB/Sample_Plan/APPENDIX_F.doc)

Dump Truck reference:

Hendrickson, Chris. Department of Civil and Environmental Engineering, Carnegie Mellon University. *Project Management for Construction. Fundamental Concepts for Owners, Engineers, Architects and Builders. Version 2.2. 2008*  
[http://pmbbook.ce.cmu.edu/04\\_Labor%2C\\_Material%2C\\_And\\_Equipment\\_Utilization.html](http://pmbbook.ce.cmu.edu/04_Labor%2C_Material%2C_And_Equipment_Utilization.html)

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11) Delivery truck assumptions for site prep work

Standard delivery truck assumed to have a bed size of 53 feet in length, 4.33 feet wide, and 13 feet high  
 The pipe and conduit to be used for this project will have an inner diameter of 4 inches. Assume an outer diameter of 6 inches (worst case scenario) which = 0.5 feet  
 Sections across width of truck = 8.66 which rounds down to 8 sections across  
 Sections in bed of truck = 40 number of 10 foot long sections in bed 53 feet across and 4.33 feet wide  
 For 6" diameter pipe, that's 26 layers in 13 feet of truck height, times the number of pipes in one layer= 1040  
 10400 LF/Load assuming 10-foot pipe sections  
 1 hour drive time from metro coming  
 1 hour drive time from metro returning  
 5200 LF/hour

Assume that the truck can go 45 miles per hour. Also, the hour drive time includes time for loading and driving, and the hour return time includes time from unloading and driving.

Time will also be required to haul the prefabricated concrete manholes and handholes from the manufacturer. Each standard truck, with a bed size of 53 x 4.33 feet = 229.49 SF in area, can hold up to 3 manhole vaults, with an area of 12 x 6 feet = 72 SF  
 For the 31 projected manhole vaults, that means 11 trips on a delivery truck (10 full loads plus one partial load). The handhole vaults, with an area of 4 x 4 feet = 16 SF, will fit on the last delivery truck with the 1 remaining manhole vault.  
 For the delivery truck, this means an additional 11 trips at 2 hours per round trip = 22 hours

12) Gravel amount assumptions

From the Baltimore Gas & Electric publication *Conduit Construction Guide*, 8 inches of gravel are needed as a base beneath the trenches installed through traditional trenching, the handhole vaults, and the manhole vaults.  
 Trenching 19961 LF times 1.5 FT trench width = 29941.5 SF area in bottom of trenches  
 Area disturbed for handhole and manhole vaults = 3580 SF total for pits  
 33521.5 SF  
 0.666667 Thickness of gravel in feet  
 22347.67 CF of gravel needed  
 827.7576 CY of gravel needed

13) Gravel Delivery Assumptions

The distance between Fort Meade and Baltimore is roughly 20 miles. Assume that there is a gravel pit somewhere within the 20-mile radius of Fort Meade for estimation purposes.

Distance to dump site:	20 Miles	Assumed to be this far for our construction emission estimate purposes.	40 MILE ROUND TRIP
Dump truck capacity	12 CY	Based on standard dump truck capacity	
Speed of dump trucks:	30 miles per hour	Based on estimated speed of trucks between site and fill pit.	
Number of seconds in an hour	3600 Seconds/hour	Standard conversion	
Dumping time	60 Seconds per load	Based on assumption listed in Example 4-10, page 20 of the reference that 6 CY takes 30 seconds, therefore it is assumed 12 CY would take 60 seconds	
Capacity of the loading bucket	1 CY	Based on the size of the loader/bulldozer used in the calculations (could be modified to be suited for the amount of clearing debris the loader can pick up)	
Number of hours on-site	8 hours	Assume dump trucks work on-site 8 hours per day	
Dump truck travel time round trip =	4,800 seconds	Equation 4.7, page 19	
Dump truck loading time =	720 seconds	Equation 4.8, page 19	
Dump truck dumping time=	60 seconds	See "dumping time" above	

Total Truck Operating time per 12 CY of Material moved=	5,580 seconds	per trip	Equation 4.9, page 19
	1.55 hours	per trip (12 CY of debris)	CARDNO TEC equation for productivity
	25.80645 miles/hour	productivity	Based on hours per load trip for a xxmile driving route

Daily Hauler Productivity is:	61.94 CY	per 8 hour day per truck	Equation 4.10, page 19
	7.74 CY	per hour per truck	GRAVEL

Dump Truck reference:

Hendrickson, Chris. Department of Civil and Environmental Engineering, Carnegie Mellon University. *Project Management for Construction. Fundamental Concepts for Owners, Engineers, Architects and Builders. Version 2.2. 2008*  
[http://pmbook.ce.cmu.edu/04\\_Labor%2C\\_Material%2C\\_And\\_Equipment\\_Utilization.html](http://pmbook.ce.cmu.edu/04_Labor%2C_Material%2C_And_Equipment_Utilization.html)  
 Pages 18-21

14) Concrete amount assumptions

As discussed in #8 above, only the concrete for the conduits will be generated on site (manhole and handhole vaults will be pre-fabricated and trucked to the site--see calculations under #11 above). For the conduit, the inner diameter of the conduit will be 4 inches. The outer diameter of 4-inch PVC pipe is generally 4.5 inches, as per FlexPVC at the website <http://flexpvc.com/PVCPipeSize.shtml>  
 From the Baltimore Gas & Electric publication *Conduit Construction Guide*, 2 to 6 inches of concrete are needed as encasement  
 Assume a 4-inch thickness of concrete around the PVC conduit.  
 Area of inside of concrete encasement = (4.5/2/12)squared \* Pi 0.110391 SF  
 Area of outside of concrete encasement = (8.5/2/12)squared \* Pi 0.393863 SF  
 Area of "ring" of concrete encasement around PVC conduit 0.283472 SF  
 Volume of concrete = area of encasement \* length of conduit 5658.389 CF  
 209.5867 CY

Assume all concrete is trucked to the site.

15) For fugitive dust emissions, assume that the work will be conducted for a 6-month period, June - December 2013

16) For construction worker POVs, calculate the number of POV trips per site activity. For each activity, take the total hours of non-road heavy equipment operation and divide by 8 to get the number of days. Multiply this number by 1.25 to get the approximate number of vehicle trips per activity. Assume that each trip will average 4 miles on Fort Meade (from gate to work site, from work site to lunch place, etc.). The 1.25 multiplier factor comes from the following reference:

ENVIRON International. 2011. South Coast Air Quality Management District, California Emissions Estimator Model Appendix A: Calculation Details for CalEEMod. February 2011.

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## **APPENDIX C**

### **FEDERAL CONSISTENCY DETERMINATION**

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FEDERAL CONSISTENCY DETERMINATION FOR THE  
INSTALLATION INFORMATION INFRASTRUCTURE MODERNIZATION PROGRAM AT FORT MEADE  
ENVIRONMENTAL ASSESSMENT

May 14, 2013

FORT MEADE  
ANNE ARUNDEL COUNTY, MARYLAND

## **1.0 INTRODUCTION**

This document provides the State of Maryland with the Fort George G Meade's (FGGM) Consistency Determination under Coastal Zone Management Act (CZMA) Section 307 and Title 15 Code of Federal Regulations (CFR) Part 930, Subpart C, for implementation of upgrades and modernization of the voice network, Assured Services Local Area Network (ASLAN), data core, and outside and inside plant as part of the Installation Information Infrastructure Modernization Program (I3MP) effort to upgrade and modernize the information technology infrastructure at Fort Meade .

The CZMA was enacted on October 27, 1972 to develop programs to manage the use of and impacts to coastal resources. Federal consistency is required where federal agencies have reasonably foreseeable effects resources within the coastal zone. The Office of Ocean and Coastal Resource Management, within the National Oceanic and Atmospheric Administration's (NOAA's) National Ocean Service, provides oversight in the application of federal consistency, as well as legal assistance and mediation for CZMA related disputes. On a state level, the development of a coastal zone management plan is the responsibility of a selected state agency. The state agency is also responsible for performing the federal consistency reviews for federal projects within their state. The Maryland Department of Natural Resources (MDDNR) is the lead agency for the state's Coastal Zone Management Program (CZMP). The CZMP outlines the enforceable policies that must be assessed when making a federal consistency determination. Maryland's enforceable coastal policies were approved by the National Oceanic and Atmospheric Association on March 18, 2011.

FGGM has prepared a Draft Environmental Assessment (EA) to evaluate the potential environmental impacts associated with the proposed I3MP infrastructure upgrades in accordance with the National Environmental Policy Act of 1969 (NEPA), as amended (42 US Code 4321-4347), the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and 32 CFR Part 651 (Environmental Analysis of Army Actions).

The purpose of the Proposed Action is to provide the outside plant infrastructure, which would allow the fiber optic architecture to support robust network reliability and enable the throughput that unified capabilities (UC) requires. Network UC enables strategic, tactical, classified, and multinational missions with a broad range of interoperable and secure capabilities for converged non-assured and assured voice, video, and data services from the end device, through Local Area Networks (LANs), and across the backbone networks. The addition of the OSP infrastructure provides this capability by deploying the fiber optic connectivity in a mesh network with multiple paths. The need for the Proposed Action is to allow Fort Meade to be able to communicate, send voice, data and video files within the Installation, to deployed combat forces and to other active Continental United States (CONUS) activities. Without the capacity improvements and modernization, FGGM would not have the robust capacity required to achieve the Enterprise Strategic Plan goals.

The Proposed Action consists of upgrades and modernization of the voice network, Assured Services Local Area Network (ASLAN), data core, and outside and inside plant as part of the I3MP program effort to upgrade the information technology infrastructure. Selection of the I3MP segment routes were made in consultation with the Fort Meade Environmental Division in an attempt to avoid environmental impacts, while trying to achieve the most cost effective route and avoid environmental sensitive areas. Trenching would be the default method of installation. Directional boring or cable plow methods would be employed where needed to minimize impacts and allow for more efficient cable installation. Cables would be run into receiving buildings through a below-ground coring to wall mounted cabinets installed in basement utility closets or laundry rooms. Bentonite (clay) slurry would be used as a drilling fluid to help facilitate directional boring. The bentonite slurry disposal area would be located at a site formerly used as a stockpile area for installation projects. Upon final completion of the project, the pit would be restored and stabilized to pre-construction conditions.

Installation of the cable upgrades would require placement of approximately 4.45 miles of underground conduits containing the cable, three handholes, and 31 manholes (Figure 1). The upgraded cable would be run into receiving buildings through a below-ground coring to wall mounted cabinets installed in basement utility closets or laundry rooms, as applicable. A total of 4.7 acres of ground would be disturbed during installation, but would be restored to pre-construction conditions and vegetated with native seed mix. Trees would be replaced as per the FGGM Tree Policy.

Figure 1: Proposed Project



## **2.0 EFFECTS TO RESOURCES**

Due to the nature of the project, several resources would not be affected by the Proposed Action. These include geology, groundwater, wildlife, threatened or endangered species, wetlands utilities, environmental justice, or protection of children from environmental health risks and safety risks. Temporary beneficial socioeconomic impacts may occur from construction employees patronizing local businesses during installation of the cable upgrades. Installing the buried cable is expected to produce short-term adverse impacts to land use, visual resources, soils, air quality, noise, surface water, floodplains, stormwater management, and forested areas. No permanent adverse impacts are expected to result from the Proposed Action.

### **2.1 Land Use**

The Proposed Action would be compatible with surrounding land use and would not result in conversion of land use; therefore no impacts to land use would occur.

### **2.2 Visual and Aesthetic Values**

Short-term visual impacts would occur in the vicinity of the project during installation. No long-term visual impacts would result from the implementation of the Proposed Action.

### **2.2 Geology and Soils**

Excavation, grading, earth moving, and compaction of soil would result from cable installation activities. As a result, soils would be compacted, soil layer structure would be disturbed and modified, and soils would be exposed, increasing the potential for erosion. An approved erosion and sediment control plan (ESCP) and stormwater management plan (SWMP) waiver would be required before construction starts to manage soil erosion and prevent siltation entering wetlands and Waters of the U.S. The ESCP would contain BMPs to minimize point pollution discharges to surface waters, preserve stream channels and water quality. It is anticipated that standard BMPs such as vegetative and structural and protective covers, sediment barriers, construction of water conveyances, and repairing bare and slightly eroded areas in a timely manner would be implemented under the ESCP. Conditions of the SWMP waiver and FGGM's existing Stormwater Pollution Prevention Plan (SWPPP) would be followed to control the rate of stormwater runoff from newly disturbed areas during construction.

In addition to an approved ESCP plan by the local NRCS office, a National Pollution Discharge Elimination System (NPDES) permit, approved by MDE, would be required.

## **2.4 Air Quality**

Short-term impacts to air quality may occur as a result of construction activities. Short-term impacts may include dust and emissions from construction equipment. BMPs would be utilized during construction to minimize these potential impacts. No long-term impacts to air quality are anticipated as a result of the Proposed Action.

## **2.5 Noise**

No long-term adverse noise impacts would result from the Proposed Action. Short-term impacts related to construction activities are anticipated due to construction equipment. The highest noise levels generated by heavy equipment would not exceed the hourly equivalent noise level of 75 dBA for more than one hour and therefore would not exceed the USEPA criteria for construction noise at a sensitive receptor. Additionally, construction activities would occur during regular working hours, 7:30 a.m. to 5:30 p.m. and are not anticipated to impact neighboring communities. Noise impacts associated with receptors at FGGM would likely not be consistent because the construction would be transient and would not impact the same receptor for the overall length of the proposed cable installation. Therefore, no adverse impacts resulting from noise are anticipated.

## **2.6 Water Resources**

The Proposed Action may have minor adverse impacts to surface waters as a result of construction activities. These impacts would result from erosion occurring in disturbed areas and running off into surrounding surface waters resulting in increased sediment in area surface waters. An ECSP would identify appropriate BMPs to minimize these potential impacts. There would be no impact to known wetland resources. The Proposed Action will impact a total of 20,367 square feet of 100-year floodplains. However, the Proposed Action has been designed to minimize impacts by installing the cable through existing streets and sidewalks. As the project moves forward all applicable permits would be obtained and construction would follow all applicable regulations with regard to floodplain impacts.

## **2.7 Biological Resources**

Under the Proposed Action utility upgrades would occur primarily in areas that are already disturbed (i.e. along paved roads and sidewalks, in areas of mowed/maintained yards and landscaped areas, etc.). A portion of the utility upgrades would occur within an existing utility right-of-way in a forested area. Any areas of disturbance outside of the utility right-of-way would be returned to the original grade and vegetated with an approved native species mix.

Short-term disturbances to wildlife and migratory birds would likely occur due to noise associated with construction activities; however, due to the setting it is anticipated that wildlife and bird species present at FGGM are acclimated to existing noise associated with daily activity

at FGGM and additional, temporary noise is not likely to adversely affect these species. Permanent impacts to wildlife and bird habitat are not anticipated.

## **2.8 Cultural Resources**

Temporary visual impacts to the FGGM Historic District and Llewellyn Avenue Bridge may occur during construction activities. Upon the completion of the Proposed Action activities the disturbed area would be returned to its condition prior to disturbance and no permanent impacts would occur.

No NRHP-eligible or listed resources are located within the APE for archaeology; therefore, no impacts to archaeological resources would occur as a result of implementing the Proposed Action.

## **2.9 Hazardous Materials and Waste**

Hazardous Materials and Waste would be limited to epoxies and adhesives used by the contractors for the connection and sealing of PVC conduit pipes, fuels, and lubricants. These materials would be managed in accordance with FGGM hazardous materials and waste management policies. Any hazardous materials or waste generated by the contractor during installation activities would be disposed of at an approved off-site treatment or disposal facility. Several of the buildings that would require boring of holes to run cable into the building have been identified as potential having asbestos-containing material. FGGM has an Asbestos Management Plan which would be followed during these installation activities. No impacts associated with hazardous materials or waste are anticipated as a result of the Proposed Action.

## **2.10 Utilities**

The Proposed Action would not result in impacts to potable water, wastewater, or electric and gas. No increases in usage of potable water, domestic and industrial wastewater, waste management and recycling, or electric and gas would occur. The Proposed Action would provide a beneficial impact to communication. The proposed I3MP utility upgrades would modernize the OSP telecommunications infrastructure not addressed by previous upgrades. The upgrades would provide the fiber optic architecture to enable robust network reliability, to the standard that throughput unified capabilities requires.

## **2.11 Transportation**

The Proposed Action would not result in increases in traffic that would result in impacts to area roadways resulting in decreases in level of service or capacity.

## **2.12 Socioeconomics, Environmental Justice, and Protection of Children**

No long-term impacts to socioeconomic resources, environmental justice communities, or children would occur as a result of the project. Short-term benefits would result from construction expenditures and employment, which would last only for the duration of installation.

## **3.0 CONSISTENCY DETERMINATION**

The Proposed Action was evaluated for consistency with the Maryland Coastal Zone Management Program and its enforceable policies. Sections 3.0, 4.0, and 5.0 describe the potential effects of the Proposed Action on the resources outlined in the policies.

### **3.1 Core Policies**

The Proposed Action would comply with the Core Policies outlined in Maryland's Enforceable Coastal Policies Effective April 8, 2011. The Proposed Action would not affect:

- The degree of purity of air resources which will protect the health, general welfare, and property of the people of the State of Maryland.
- Noise which may jeopardize health, general welfare, or property, or which degrades the quality of life
- The unique ecological, geological, scenic, and contemplative aspects of State wild lands or their future use and enjoyment
- The safety, order and natural beauty of State parks and reserves, forests, scenic preserves, parkways, historical monuments or recreational areas
- Water appropriation and use (project would not require water appropriation)
- Natural character and scenic value of rivers or waterways
- Scenic or wild rivers due to dams or other structures that would impede the natural flow
- The dune line along the Atlantic Coast (project does not occur near the dune line)
- The integrity and natural character of Assateague Island
- Non-tidal waters that dredge, fill, bulkhead or change the shoreline; construct or reconstruct a dam; or create a waterway
- Soils such that soil erosion would occur that would impact natural resources and wildlife; alter flood control; prevent impairment of dams and reservoirs; maintain navigability of rivers and harbors; affect the tax base, public lands, and the health, safety and general welfare of the people of the State of Maryland
- The Port of Baltimore by introducing hazardous materials
- Operations on the Outer Continental Shelf.

### **3.2 Water Quality**

The Proposed Action would not affect water quality and is consistent with the following policies:

- No addition, introduction, leaks, spills, or emitting of liquid, gaseous, solid or other substances that will pollute any waters of the State of Maryland.
- Protection of waters of the State for water contact recreation, fish and other aquatic life and wildlife. As well as shellfish harvesting and recreational trout waters
- No construction, installation, modification, extension or alteration of an outlet that could cause or increase the discharge of pollutants into the waters of the State.
- Use of best available technology for permitted discharges into State waters
- Control of thermal discharges
- Storage of pesticides at least 50 feet from water wells or stored in secondary containment approved by the Maryland Department of the Environment
- Development or redevelopment of land for residential, commercial, industrial, or institutional purposes shall use small-scale non-structural stormwater management practices and site planning that mimic natural hydrologic conditions
- Used oil would not be dumped into sewers, drainage systems, or waters of the State, or onto private or public land
- No toxic material or material with the potential for being toxic would be dumped into Maryland waters or waters off Maryland's coastline

### **3.3 Flood Hazards**

The Proposed Action would not affect flood hazards and is consistent with the following policies:

- No projects in coastal tidal and non-tidal floodplains which would create additional flooding upstream or downstream, or which would have an adverse impact upon water quality or other environmental factors
- Floodplain encroachments would be designed to provide a minimum of 1 foot of freeboard above the elevation of the 100-year frequency flood event.
- There would be no unlined earth channels or lined channels that would change the tractive force associated with the 2-year and the 10-year frequency flood events.
- No Category II, III, or IV dams would be built
- The project would not result in construction or substantial improvements of any residential, commercial, or industrial structures in the 100-year frequency floodplain and below the water surface elevation of the 100-year flood.

- No channelization will be used as a flood control technique
- The project will achieve the purposes intended
- Development will not increase the downstream peak discharge for the 100-year frequency storm event in the Chesapeake Bay Watershed and its tributaries

#### **4.0 COASTAL RESOURCES**

The Proposed Action would not affect the following as described in Maryland's Enforceable Coastal Policies:

a. The Chesapeake and Atlantic Coastal Bays Critical Area

The Proposed Action would not occur within a critical area or affect resources as described in items 1-31 within this section of Maryland's Enforceable Coastal Policies; therefore no impacts to critical areas would occur.

b. Tidal Wetlands

No tidal wetlands are present on the project site; therefore no impacts to tidal wetlands would occur as a result of the Proposed Action.

c. Non-Tidal Wetlands

The Proposed Action would not occur within a non-tidal wetland; therefore no impacts would occur.

d. Forests

The Proposed Action would utilize an existing utility right-of-way within a forested area. If installation activities occur outside of the right-of-ways, impacts to the forested areas are anticipated to be minor and the disturbed area would be returned to its original grade and seeded with approved native species mix. If impacts to trees are unavoidable the Project Proponent would comply with FGGM's Forest Conservation Act and Tree Management Policy. Native tree species would be used for reforestation and all specimen trees would be avoided and preserved.

e. Historical and Archaeological Sites

Under the Proposed Action, temporary effects to the Fort George G. Meade Historic District (AA-2095) and Llewellyn Avenue Bridge (AA-2366) may occur in the form of removal of existing asphalt and roadways, opening of trenches, directional drilling, and the placement of underground fiber optic lines and PVC pipes. However, these temporary effects would occur in areas that are currently located under paved roads, asphalt roadways, and other previously disturbed areas. These areas would be returned to their current conditions following the completion of installation activities.

The Proposed Action includes coring through buildings to run the fiber-optic cable into them. Of the buildings where coring would occur, 13 are contributing resources of the Fort George C. Meade Historic District (AA-2095). They are Buildings 4302–4306, 4526, 4534–4536, 4544, 4546, 4547, and 4549. Coring would also be undertaken at Buildings 2018 and 8465, which are currently in the process of being evaluated for NRHP eligibility. The coring process would involve drilling a 4.5-inch diameter hole below ground, through the basement wall of each building to provide an entrance for the conduit. The cables would connect to a 2-ft-wide and 2-ft-tall cabinet mounted to an interior wall in the basement of each building. Because the conduit entrance would be underground and would comprise a very small area in the basement wall, the coring would not adversely affect the integrity of the contributing resources. The wall-mounted cabinets would be installed in basement utility closets or, in the case of housing, in basement laundry rooms, which are not significant interior spaces of the buildings. Therefore, there would be no adverse effects to any NRHP-eligible resources as a result of the Proposed Action.

No NRHP-eligible or listed resources are located within the APE for archaeology. Therefore, no archaeological resources would be affected by the Proposed Action.

f. Living Aquatic Resources

The Proposed Action has been designed to avoid impacts to any existing wetlands. FGGM field delineated wetlands (FGGM 2012e) and a field meeting between representatives of the Project Proponent, USACE, and MDE (FGGM 2013c) determined that there would be no anticipated wetland impacts. Therefore no impacts to these resources would occur to wetland resources. During design for work in these areas, FGGM would ensure that all federal and state regulations as well as FGGM’s NPDES permit stipulations are followed during installation. During the design, appropriate ESCP would be developed and necessary permits, such as the SWMP waiver, would be obtained.

## **5.0 COASTAL USES**

### **Mineral Extraction**

No mineral extraction activities would occur under the Proposed Action; therefore, the Proposed Action would comply with the Coastal Zone Policies.

### **Electrical Generation and Transmission**

The Proposed Action does not involve electrical generation or transmission; therefore, the Proposed Action would comply with the Coastal Zone Policies.

### **Tidal Shore Erosion Control**

The Proposed Action does not involve a tidal shore erosion project; therefore, the Proposed Action would comply with the Coastal Zone Policies.

### **Oil and Natural Gas Facilities**

The proposed action does not involve oil and natural gas facilities; therefore the proposed action would comply with the Coastal Zone Policies.

### **Dredging and Disposal of Dredged Material**

The Proposed Action would not involve dredging activities or require the disposal of dredged material; therefore, the Proposed Action would comply with the Coastal Zone Policies.

### **Navigation**

The Proposed Action is not related to navigation projects; therefore, the Proposed Action would comply with the Coastal Zone Policies.

### **Transportation**

The Proposed Action is not a transportation project; therefore, the Proposed Action would comply with the Coastal Zone Policies.

### **Agriculture**

The Proposed Action does not involve agricultural land management activities or agricultural operations; therefore, the Proposed Action would comply with the Coastal Zone Policies.

### **Development**

The Proposed Action is not a development project; therefore, the Proposed Action would comply with the Coastal Zone Policies.

### **Sewage Treatment**

The Proposed Action does not involve sewage treatment; therefore, the Proposed Action would comply with the Coastal Zone Policies.

## **6.0 CONCLUSION**

FGGM has determined that implementing the I3MP Program at Fort Meade in Anne Arundel County, Maryland would be fully consistent to the maximum extent practicable with the applicable policies of the Maryland Coastal Zone Management Program.

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